DOCUMENT RESUME

ED 084 967 HE 004 854

AUTHOR	Hart, Sylvia E., Ed.; Rott, Robert K., Ed.
TITLE	Proceedings of the Conference and Workshop on Behavioral Objectives, January 1971.
INSTITUTION	State Univ. of New York, Buffalo. School of Nursing.
PUB DATE	Apr 72
NOTE	94p.
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	*Behavioral Objectives; Conference Reports; *Curriculum Development; *Educational Objectives; *Higher Education; Learning Experience; *Nursing; Teaching Procedures; Workshops
IDENTIFIERS	*State University of New York at Buffalo

ABSTRACT

This document reports the proceedings of a conference and workshop at the State University of New York at Buffalo School of Nursing on behavioral objectives. Presentations include: the management of learning; behavioral objectives and the teaching/learning process in nursing education; curriculum development; curriculum development in the SUNYAB School of Nursing; evaluation of selected nursing course objectives; and the future directions. Summaries of panel presentations and reports from small groups are included. Appendices present an evaluation of the conference and workshop on behavior objectives, a summary of the taxonomy of educational objectives, the philosophy and evolving objectives, and a bibliography on behavioral objectives. (MJM)

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Proceedings of the Conference and Workshop on Behavioral Objectives

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Buffalo, New York 14214

Date of Publication: April 1972

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PREFACE

The Faculty of the School of Nursing at the State University of New York at Buffalo have been involved in a major curriculum revision of the undergraduate nursing program since 1968. In the process of developing and implementing these revisions, the problems of adequate on-going evaluation of the program in relation to course and program objectives received considerable attention. As a result of the faculty's expressed interest in further developing and refining their skills in stating objectives in behavioral terms, plans for a workshop on the development of behavioral objectives were initiated. Additional impetus for the Workshop was provided by Dr. Robert K. Rott's Proposal to Improve the Climate of Learning.

The School of Nursing Undergraduate Curriculum Committee, chaired by Dr. Sylvia E. Hart, in collaboration with Dr. Robert K. Rott, Director of the Office of Evaluation of the Division of Undergraduate Studies comprised the planning group for the Workshop. Planning was initiated early in the first semester of the 1970-71 academic year. The Proceedings of the Conference and Workshop are summarized on the following pages. An evaluation is provided in Appendix A.

ACKNOWLEDGEMENTS

No program of this scope can be successful without the strong commitment and generous contributions of many people. While the list of such people in this instance is too long to record here, grateful recognition is hereby extended to:

Dr. Ruth T. McGrorey, Dean, School of Nursing for her support throughout the development and implementation of the Conference and Workshop on Behavioral Objectives.

The members of the School of Nursing Undergraduate Curriculum Committee for their creative ideas and consistent interest.

The group leaders M. Kennedy, E. McNicholas, J. Spero and R. Walsh who gave so generously of their time and talents.

The guest speakers Dr. John Bruce Francis, Dr. Robert S. Harnack, and Dr. Robert K. Rott, who presented so clearly and comprehensively the theoretical components of the Conference and Workshop.

The School of Nursing Social Committee, headed by Margaret Frainier, who provided refreshing sustenance at appropriate times.

The faculty of the School of Nursing who attended so faithfully and participated so actively in all of the Workshop sessions. Please refer to Chapter 7 for the names of those who contributed directly to the work of the groups.

Sylvia E. Hart
Co-Editor

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FOREWORD

Welcome by Dean Ruth T. McGrorey

I am especially pleased to be able to say a few words to you this morning because I have been spending a fair share of my time in Albany during the past few weeks talking with other deans of schools of nursing about the things you as a faculty have identified as vital issues. Certainly the whole problem of clinical experiences, the evaluation of clinical performance, and the determination of behavioral objectives becomes more and more important and more and more of an issue as we look at some of the things that are emerging both in our own state system and throughout the country. For example, there are two critical issues related to nursing in this legislature. One of them is the concept of the external degree and the need to evaluate experience outside of the normal educational pattern. The other is an examination of the areas in which we practice, particularly in relation to other disciplines.

As you know the nursing profession law is being revised this year. The initial law has been presented for study to the legislature, and it contains a number of revisions including a new definition of nursing practice. So I look at the program you have planned for these next few days with a great deal of interest, and I would like to spend as much time with you as possible because I think that schools of nursing, particularly those in universities and colleges, are and will be challenged to provide answers to some very controversial issues that have arisen in educational circles. Certainly the question of defining, identifying, and describing what we mean by professional competence is our responsibility--particularly competence in the clinical practice of our profession. I think we are going to be very much challenged in the area of identifying the means by which one keeps up to date in the area of clinical competence. But I do not wish to delay your workshop any longer. I know it will be both productive and enjoyable.

Chapter 1

OVERVIEW AND INTRODUCTION

Sylvia E. Hart

The plans for this workshop began very early in the semester (fall 1970) and have been coordinated through the Undergraduate Curriculum Committee of the School of Nursing. The impetus for this workshop, however, was generated by the Management of Learning proposal which was developed by Dr. Robert K. Rott, who is with us today, and Dr. Robert C. Burkhart of State University College. I circulated that proposal to you some months back and from the feedback we received, it seems that you found it quite interesting. One of the recommendations in the Management of Learning proposal has to do with the development and implementation of a faculty workshop. The first step, therefore, was to survey the faculty to see what type of focus they would find most appropriate or what their needs were in relationship to curriculum and programs. The overwhelming consensus seemed to be that there was a need for practical and theoretical program dealing with the development of behavioral objectives. With this focus in mind we began to develop this program. We worked very closely with Dr. Rott and through his efforts we also secured the services of Dr. John Bruce Francis and Dr. Robert S. Harnack. I will give you more information about these resource people later. I only wish to say now that they have all been extremely helpful to us.

We wanted to combine in this workshop both theoretical and practical components. To this end we are devoting the first day to the theoretical component, and that is why we obtained the services of experts from the areas of curriculum and higher education. But we wanted this to be a very practical kind of workshop, too, so that at the end of it we will all be

more knowledgeable and skilled in the application of behavioral objectives. Therefore, tomorrow morning, we will begin with a general session in which a group of six of us will try to share with you how we approached the problem of evaluating the overall program in terms of objectives for the new undergraduate curriculum. We would like this presentation to serve as a model for you when you move into small-group work. Each group will take the course objectives from one of the new undergraduate courses and evaluate them, analyze them, categorize them, and perhaps generate some new and different objectives on the basis of what we learned today. This small-group work will continue on Thursday, and then we will have a general session for a summary and evaluation of the entire program, moderated by Dr. Rott.

Involvement as you may have guessed from what I have said is extremely important. Without it the program cannot succeed. Questions will be most welcome throughout the program, and any comments and suggestions that you might have will be very graciously accepted.

I would like now to introduce to you Dr. Robert Rott, who is Assistant Dean in the Division of Undergraduate Studies. He is also Director of the newly formed Office of Evaluation in the Division of Undergraduate Studies. Dr. Rott obtained all of his degrees right here at the State University of New York at Buffalo. He has done some very interesting and informative work in the area of curriculum. Perhaps most pertinent to our workshop is the fact that he was actively involved in the Research and Development Center for Cognitive Learning at the University of Wisconsin, where he carried out research on student critical thinking abilities.

Inasmuch as the Climate-of-Learning Proposal led to the development of this workshop, we felt it appropriate for Dr. Rott to share with you his own thoughts on the proposal and to answer any questions that you might have relative to it. It is with pleasure that I present to you Dr. Rott.

Chapter 2

THE MANAGEMENT OF LEARNING

Robert K. Rott

I am very pleased to be here this morning, and I want to say right off that I feel very much in the same position as that of the clergyman who exhorts his congregation to have better attendance--but of course, the people who are there don't need his advice. When I talk about improving teaching and the climiate of learning before this audience, I feel very much in that position, for there are sectors of this campus in greater need of such efforts than the School of Nursing at SUNY--Buffalo.

There were various motivating forces leading to a proposal to improve the climate of learning. These forces included complaints of students concerning the quality of teaching on this campus and a recent recommendation by the SUNYAB Faculty Senate that effectiveness of teaching be an important factor in the reward and recognition of faculty. In addition, the Chancellor of the State University recently established a committee that stresses the importance of effective teaching. So, motivated by my personal experience as Assistant Dean as well as these other factors, my colleague and I put some ideas together into a proposal. Since most of you already have some familiarity with it, I need only summarize.

The management-of-learning proposal, as it is sometimes called, is concerned with quality of instruction. Its major theme is that we need to improve instructional quality in order to meet the needs of student learning more fully and to make better use of faculty creativity. We need to apply resources in non-political ways so that we can develop new approaches to

instruction in order to meet the demands for constructive change. A major assumption here is the sharing of responsibility for learning. If there is a responsibility on the part of faculty to teach, there must be not only a responsibility on the part of students to learn but also a providing of resources maximizing the quality of teaching-learning situations. Among these resources would be, for example, knowledge of ways to motivate students together with various physical resources such as the autotutorial laboratory.

Another assumption is that increased freedom of choice is a major goal of instruction and learning that applies equally to the instructor and the learner. Freedom of choice is defined as an increase in the number of available options that will tend to improve the quality of instruction. Freedom of choice, then, has to do with the individual instructor having a knowledge of a variety of techniques to approach specific educational problems. By the same token, the student's options are also increased. Students who cannot learn by means of one technique will have opportunity to learn by other means.

One suggestion for implementation of the proposal is a faculty-wide curriculum committee that recognizes the management of learning as a responsibility shared by the various constituents of the faculty and that such management relates to ways of improving the teaching-learning situation. Now this proposal should be viewed as a generic model that can be modified as necessary, and it looks to me as though the curriculum committee of the School of Nursing is headed in a direction permitting implementation of the possibilities that I am describing. Briefly, such a committee or perhaps its subcommittee needs to be composed of faculty with expertise in theories of learning and teaching, measurement and evaluation, systems analysis and

management, communication media, course and program design, and so on. Within the framework of a systems approach to the management of learning, this expertise would be available to all faculty in the School of Nursing.

Let me elaborate briefly on the functions of this curriculum committee or subcommittee, which ties in so closely with our acceptance of the management-of-learning concept and the notion of a systems approach. You will recall that the committee has been designed purposely to have members with various kinds of expertise. Upon considering specific problems of instruction, they might suggest implications for different rates and sequences of instruction; criteria on how well and how fast a learner may be expected to progress; the uses of linear, branching, and parallel sets of material; the appropriateness of grouping by ability, diagnostic testing, and remedial instruction; the tasks best done by faculty and best done by machines; the identification of critical learner and other instructional variables; and the uses of criterion-referenced measures and norm-referenced measures. I believe that acceptance of management-of-learning priciples permits use of alternative methods, techniques, and procedures without substantially altering the critical functions of teaching and learning. Acceptance of a systems approach enables separation of course design, teaching, resources available, learning environment, and so on, from each other--thus easing the problem of diagnosis and treatment of educational problems. Our specially designed curriculum committee is central to, and integral with, the management-of-learning and systems approaches.

If the quality of instruction is to be improved, new faculty roles and functions may be necessary. This point ties in with the design of a curriculum committee and with the instructor who accepts the role of manager of learning.

Acceptance of this role results in emphasis placed primarily on the teaching-learning situation rather than on research in the discipline. Acceptance of this role results in an instructor who is knowledgable of the variables in the teaching-learning situation and is capable of organizing these to maximize learner achievement. Acceptance of this role implies operating within a system so that when problems arise, one looks at the various elements of the system in order to resolve the problem rather than looking at only the instructor or the student. In brief, you cannot learn for the student, but you can do things with the environment to maximize learning on the part of the student.

An additional possibility that needs to be looked at is the concept of an instructional file, which is the equivalent of the so-called research and publication file of which you are all aware. Our system of reward and recognition has stressed research and publication as the important criteria for success, and by comparison teaching has been given only a minor part to play. So, it is important to demonstrate the feasibility of the instructional file. During the past semester, students in my Seminar on Course and Teaching Evaluation (DUS 301-302) attempted to demonstrate the feasibility of an instructional file, but they were not able to do so. However, it is to the very great advantage of faculty to demonstrate the feasibility of this receptacle for information pertinent to teaching rather than information pertinent to research and publication. This point is crucial, for if the system is to reward good teaching, then we must provide reliable evidence to support the recognition and reward that good teaching merits. I have spoken to President Ketter on this matter and he responded positively to the idea, stating that it is necessary to supply concrete data.

You may recall that the "Proposal to Improve the Climate of Learning within SUNY" was distributed to many institutions of the state system with a request for review and feedback. I'd like now to relate some of the responses, beginning with negative comments:

> I consider this approach disastrous. What "quantifiable" goals can one set up in art or poetry or music or literature? Do you measure an appreciation of Bach in units; can one appreciate Shakespeare by numbers? Students are rightly demanding new courses that concentrate on subtleties, on concepts, or in Plato's definition of the goal of the teacher, in learning the "love of beauty." As any one who has ever been in love could tell you--whether in love with learning or with a person--love is not quantifiable.

The response to that particular reaction goes something like this: "Nonsense! Love can be measured. For one example, you know whether or not you are in love. Using a binary system, we may obtain a response that is either "Yes" or "No." Perhaps we need a system that accommodates the responses of "Don't Know" or "Maybe." This is one kind of measurement. But there is nothing that precludes the use of a slightly more complicated system of measurement. We can rank order individuals in terms of the relative strength or force of feeling in love. Initially, we need to define what kind of love we are talking about. Let's get an acceptable definition. This is the first step in setting up a research design to measure love. Then let us assume that the kind of love we are going to talk about is the romantic kind that leads to chills and burning! Next, we need to select a panel of experts on romantic love, such as Marcel Mastroiani, James Coburn, Vanessa Redgrave, Sophia Loren, Roman Polanski, Richard Burton, and so on. We must assume that all of these are people who have experienced the chills and burning of romantic love and can recognize the symptoms in others. These "experts" could design a test to measure this kind of love. Having designed and field tested an instrument to measure romantic love, our experts could undoubtedly make some

kind of rank ordering of individuals ranging from people who are very much in love to people who definitely are not. This approach constitutes another kind of measurement.

Another negative statement received is the following comment:

> I have very serious qualms about your concepts of teaching. While it is fashionable in several places these days, especially in the U. S. Office of Education, to espouse the imposition of quantitative criteria on teaching, the whole trend of college teaching is moving away from areas and concepts amenable to quantification, and towards new goals that defy quantification.

Now let me mention some of the positive comments:

> ....I believe your proposal would be quite helpful to us in that it systematizes and provides definitions for many of the activities that we have been attempting to undertake.
>
> The model of the teaching-learning situation you proposed is enormously important and should be tested. It is right for some teachers and some disciplines.
>
> I found your proposal to improve the quality of teaching within SUNY to be a stimulating one, with its suggestions and implications relevant to other educational systems as well. At the very least, formal and informal discussion of the problems you raise will highlight the importance of effective teaching in visible, new ways, but, more importantly, the proposal should enlist the attention and the efforts of the variety of persons who should be concerned with the question of instruction. I do have some questions and suggestions that might be of interest to you as you proceed with your work.
>
> I approve very much of the "specific data" that resolution two encourages.
>
> I agree with your basic list of structural elements...and I think that the "workshop or seminars on teaching effectiveness" are crucial here. These workshops could give your program the momentum that it needs to begin.

That's enough on the negative and positive reactions, It seems clear that there will never be complete agreement on courses of action for educational programs. Perhaps the greatest danger that we face is the absence of direction--a kind of "Alice-in-wanderland" course that happens for no

particular reason. I would like to end on this note by quoting a passage from the chapter "Pig and Pepper" in Alice's Adventures in Wonderland. Alice had been wandering around in the forest when she suddenly came upon a little house about four feet high. "Whoever lives there," she thought, "it'll never do to come upon them this size: why, I should frighten them out of their wits!" So she ate bits of mushroom until she had reduced herself to nine inches high.

There was a great deal of noise issuing from the house,--"a constant howling and sneezing and every now and then a great crash, as if a dish or kettle had been broken to pieces." Upon entering the house, Alice saw the Duchess sitting on a three-legged stool and nursing a baby, the cook stirring a large cauldron of soup with too much pepper in it (and that's the reason for all the sneezing), and the Cheshire Cat. The baby was alternately sneezing and howling. "The only two creatures in the kitchen that did not sneeze were the cook and a large cat, which was lying on the hearth and grinning from ear to ear." While the cat was occupied with grinning at the scene, the cook was engaged in putting too much pepper in the soup and in throwing things at the Duchess and the baby: fire-irons, saucepans, plates, dishes, and so on. The baby howled. The Duchess sat imperturbably, occasionally addressing a sharp word to the baby, such as "Pig!" Then the Duchess flung the baby at Alice, who carried it outside. Discovering that the baby really was a pig, she put it down, and the creature ran off into the woods.

Thinking about other children she knew who would do very well as pigs, Alice was startled by seeing the Cheshire Cat grinning down at her from a tree. She noticed that he had very long claws and a great many teeth, so

she felt that the creature should be treated with respect. Wondering what to do, Alice addressed the cat:

> "Cheshire Puss," she began, rather timidly, as she did not at all know whether it would like the name; however, it only grinned a little wider. "Come, it's pleased so far," thought Alice, and she went on. "Would you tell me, please, which way I ought to go from here?"
>
> "That depends a good deal on where you want to get to," said the Cat.
>
> "I don't much care where--" said Alice.
>
> "Then it doesn't matter which way you go," said the Cat.
>
> "--so long as I get <u>somewhere</u>," Alice added as an explanation.
>
> "Oh, you're sure to do that," said the Cat, "if you only walk long enough."

Chapter 3

BEHAVIORAL OBJECTIVES AND THE TEACHING/LEARNING PROCESS IN NURSING EDUCATION

John Bruce Francis

This workshop on applying behavioral objectives to the training of nurses has both a theoretical and a practical orientation. The working sessions during the next few days will introduce you to practical techniques, while my task is to provide some theoretical background, by discussing what happens to the teaching/learning process when it is designed around behavioral objectives. Hopefully I can provide some perspectives for later applications to your teaching.

The Nature of Teaching/Learning

The teaching/learning process is a series of patterned interactions involving mutual transmission and feedback between instructor and student, with resultant changes in both. I emphasize mutuality and the fact that the successful teaching/learning process changes both the student and the instructor, because my experience has been that the students upon whom I have had the most influence are the very ones who have most changed my thinking.

It is difficult to determine cause and effect in this because the relationships are so complex and the changes so interrelated. Indeed, the very notion of cause and effect in instructor/student interaction may need to be reconsidered and replaced by a more general framework capable of representing adequately the complexity and interrelation.

For me, the theory of cybernetics provides such a framework, primarily because it treats control and change as functions of the transmission and

feedback of information. In the classroom, control and change of ideas, attitudes, and skills is the end goal, while transmission and feedback of information between instructor and students provides the means. The traditional role of instructor as purveyor of content is de-emphasized in favor of his role as evaluator and feedback agent. The student exchanges his traditional role as passive recipient for that of active participant.

The validity of cybernetic theory in this context is based upon the fact that these same characteristics are key features of the behavioral objectives approach. Instructor and student specify the behaviors that are desired as outcomes of the course being taught. In the process of the course, the instructor observes and evaluates the student's progress toward those outcomes and feeds corrective information back, enabling the student to increase, decrease, or modify his movement toward the pre-set objective. In practice, the process is not usually so clear-cut, but the cybernetic model provides a useful way of conceptualizing the issues raised by applying behavioral objectives to the teaching/learning process.

Classification of Objectives

Since one of your tasks in this workshop will be the writing of behavioral objectives, it may be helpful to consider various ways in which they can be classified. Perhaps the best known system classifies objectives according to their content, by means of a scheme developed by Bloom *et al.* (1956), and then extended by Krathwohl *et al.* (1964). Bloom and Krathwohl organized objectives for the cognitive and affective processes (or domains, to use their terminology) into highly elaborate taxonomies. A third domain, mentioned by Kibler, Barker, and Miles (1970) but not as highly developed, is that of psychomotor skills. It would seem that this is an area which the medical and

nursing professions would find particularly valuable by concentrating on objectives dealing with the psychomotor skills so important to doctors and nurses.

The content dimension or cognitive domain of objectives is to be the focus of this workshop; but future workshops should be oriented as well toward the affective and psychomotor domains. The area to be explored is vast indeed!

Another dimension, less readily recognized, along which behavior objectives can be classified is their level of specificity of abstractness (cf. Kibler, Barker, and Miles, 1970). Three different levels can be delineated, each one less abstract and more specific than the other. All are useful in developing a behavioral objectives approach, but each serves a different function.

The Conceptual Level. The most general and abstract level at which objectives can be considered, whatever their content, is as educational objectives or educational goals. This conceptual level is usually manifested in the general philosophy of an educational program, such as might appear in a college catalogue. An overall philosophy appropriate to a nursing program is that "professional nursing has as its focus both an understanding of man as an integrated totality in constant interaction with his environment and an understanding of man's reciprocal adaptive powers as these are involved in both normal and pathological conditions." The goal is for a student completing this program to have a better understanding, which is rather general and somewhat removed from the behavioral dimension. Another educational goal is that "the purpose of professional nursing is to assist man in achieving maximum health and optimum function" and that faculty and students should be prepared

to adapt changing concepts of health to society. Because these desired outcomes are stated in so general a way, they are often criticised because too many curricula go no further -- stating their general philosophy and leaving it up to students and faculty to determine how the philosophy is to be implemented. Under such circumstances, it is small wonder that catalogue objective statements are given short shrift.

The Informational Level. At a lower level of abstraction are found more specific statements of what a student should know or be able to do at the end of a course or program. Sometimes called manifestational or informational objectives, these statements are intended to describe the ways achievement is to be manifested. The SUNYAB nursing curriculum objectives statement falls into this category.

A key to understanding this level is the verb used in formulating the objective -- for example, to assess health status and health problems, to identify nursing needs of patients and families, to implement nursing technique, to utilize problem solving. These sentences contain action verbs. Verbs like "understanding" and words describing general attitudes do not usually occur at the informational level of specification. The main purpose at this level is to convey the desired outcomes to others. Informational objectives are closer to behavioral statements of what the student is expected to be able to do at the completion of the course or program.

The Behavioral Level. The next level of specification, the most specific, is that of behavioral, operational, or instructional objectives. At this level are designated the precise standards and techniques whereby progress toward the objective will be assessed, so that the instructor and the student can know when it has been achieved. Two additional specifications or qualities

are added to the informational level. First, the conditions under which the behavior is to be shown are described. One might say, for example, that on a multiple-choice test of the knowledge, a student shall answer a certain number of items. The second quality added by this approach is the specification of the criterion used in judging acceptable performance. Here, one might specify that the student shall be able to do this with 90 percent accuracy in a limited period of time. The important point to be remembered about this most specific level is that it includes both (a) the conditions under which the behavior is to take place, and (b) the criterion to be used to determine whether or not the objective has been reached.

Relating the content and specificity dimensions yields the relationships shown in Table 1.

Table 1

Dimensions of Objectives

Specificity Dimensions	Content Dimensions		
	Cognitive Domain	Affective Domain	Psychomotor Domain
Educational Objectives	Program philosophy statements		
Informational or Manifestational Objectives	General curriculum objectives		
Behavioral Objectives	Concrete anticipated outcomes with modes and criteria for assessment		

The important point is that the levels of specificity hold for all kinds of content with which behavioral objectives deal, and that this workshop concentrates on helping instructors and curriculum planners to become more and more specific, i.e., to design objectives which are at the behavioral level of specificity regardless of whether they are cognitive, affective, or psychomotor in content.

Effects of Behavioral Objectives Approach on Teaching/Learning

When the behavioral objectives approach is applied to the teaching/learning process, certain distinct advantages become apparent, certain disadvantages must be overcome, and certain changes suggest themselves which can significantly enhance the learning process.

For students, the adoption of such an approach alleviates one of the central problems they all face, that of handling role expectations. Simply put, for most students each new class is an unknown and often vaguely threatening situation. Much of the student's initial attention is given to, and much valuable time is wasted in, trying to understand what is expected of her. There are various reasons for this. Students perceive the grade as something desirable, and at the same time anxiety producing. As a result, they spend too much time trying to figure out how to achieve a good grade. When behavioral objectives are specified, however, the student knows much more clearly in advance what is to be expected of her. Consequently, her level of anxiety is reduced. She can spend less time "psyching out" the instructor and more time finding the best way to reach the required objective. Another advantage is that she can see the relevance of the tests she has to take, and the tasks she has to perform, to the class as a whole. If the objectives are stated in advance, she can see the way in which those tasks and those tests relate to

her various objectives. There is a place toward which she is heading and she knows to a large extent when she has arrived. The issue of whether or not she sees the relevance of that class to her own goals is really separate and needs to be considered before she gets to the class. One effect of specifying behavioral objectives is that a student can know in advance whether or not she wants to take a particular course, whether or not it will be beneficial to her, whether or not it will enable her to move toward her goal. Since in nursing, at least in the early stages of training, much of the course work is prescribed, the specifying of objectives can allay any sense of an onerous lock-step approach by continually showing the outcomes, the knowledge and skills, which will be achieved.

There are also distinct advantages in behavioral objectives for instructors--advantages which, paradoxically, come from making class preparation more difficult by requiring the instructor to use greater discipline in determining precisely what she wants her students to accomplish. She has to think this through for herself when using the behavioral objectives approach and must be able to specify what is important and what is unimportant. Just the fact that the course description is stated in very general terms and sounds good should not lull the instructor into thinking that the objective is attainable or even that it is worthwhile to achieve. This specification of behavioral objectives is particularly important in the health profession. Given the situations in which doctors and nurses find themselves and the basic skills and content that are the foundations for the profession, it is all the more important to specify in advance what is important.

Another advantage for the instructor is that specification of the objectives will enable her to establish the criteria by which classroom achievement

will be measured. The instructor can think in terms of whether or not students have reached a particular objective, not in general terms of whether or not they show interest or intellectual growth or development, something very difficult to infer from the behavior occurring in most classrooms. A third advantage is that the instructor can choose instructional strategies best designed to meet the course objectives. Finally, the instructor can now evaluate her own course. The instructor is now able to know whether or not particular methods are working and how modifications of the methods might improve them. The instructor becomes an experimenter with her own instructional strategy.

Disadvantages of the behavioral objectives approach are for the most part a function of the way in which they are understood and applied and can, with proper understanding, be successfully avoided or minimized. Three that are most often cited and most often given as reasons for eschewing the behavioral objectives approach are:

1. The behavioral objectives approach assumes that all important aspects of education can be quantified and measured. Since many educational outcomes, e.g., deep but controlled empathy for patients' suffering, are not quantifiable, it is useless to seek an approach which demands only that kind of outcome.

2. Requiring the instructor to specify objectives will hinder her from taking advantage of opportunities which arise serendipitously in the classroom, for furthering new kinds of learning, or for approaching learning in new ways.

3. The emphasis on specifying objectives in behavioral terms will lead to the occurrence in the classroom of only the most trivial kinds of behavior, since they are the easiest to assess quantitatively.

Let's look at the three disadvantages in reverse order, beginning with the third one. Certainly, it is true that one can be led into describing only

trivial kinds of behavior when first learning how to specify behavioral objectives. The initial specifying of behavioral objectives involves rather simple kinds of behavior, but, it must be recognized that this is only the beginning, for specifying behavioral objectives is a facility that needs to be developed. It is also difficult to specify the kinds of behavior that will manifest subtle attitude changes or very complicated problem solving skills; but there is at least hope that we will find better and better ways to specify the objectives and the kinds of behavior that have to occur. Any instructor attempting to accomplish some kind of an objective should at the same time observe and try to understand the process of accomplishing that objective, with a view to improving it. In this sense, I think that every instructor is a researcher. In nursing, especially, the demands of the profession will require continual development of complex objectives, of highly developed skills, knowledge, and values; and will, if the behavioral-objectives approach takes hold, require that instructors specify behaviorally more and more multi-dimensional outcomes.

The second disadvantage commonly cited is that making use of behavioral objectives will prevent the instructor from accomplishing objectives that arise spontaneously. This will occur only if the instructor applies the notion of objectives too rigidly, becomes "gung-ho" about the approach, and sees it as a panacea for all educational problems. Behavioral objectives are tools. The instructor is still the craftsman who must use and control them. Also, one can distinguish between the outcomes of a class and the means by which these outcomes are achieved. It is quite possible that new and spontaneous means of achieving objectives for a new student will arise. These should be pursued. But if new <u>outcomes</u> appear possible in the spontaneity of a classroom, the instructor ought to be rather critical about going after them.

She must consider whether the new task enhances the achievement of the objectives already set, or if it will be a relaxing diversion. The instructor should always have a reason for going off on tangents. In a profession, a great deal must be accomplished in a short period of time. Since resources and time are limited, instructors need to be careful about making use of classroom serendipity. The decision to go off on a tangent is largely a personal one that must be decided by the instructor for herself. One is never prevented by the behavioral objectives approach from making a responsible use of sponteneity in the classroom. The sole caveat is that the new tangent itself be a movement toward a worthwhile objective.

The third disadvantage is perhaps the most crucial because, if true, it would severely limit the application of a behavioral objectives approach. No one can seriously deny that certain outcomes of education are not now and may never be quantifiable. The crucial distinction must be made, however, between educational and instructional outcomes. When this is done, it becomes possible to reinterpret the claims of behavioral objectives advocates and to understand just where behavioral objectives fit in the teaching/learning process. I would contend that the most accurate description of what behavioral objectives devotees advocate is that all instructional outcomes be quantifiable and measureable. The distinction between instructional and educational objectives derives from the levels of abstractness discussed above. The aim of any course planning and instructional procedure should be to specify as clearly as possible all intended objectives, meanwhile recognizing that not all of what happens as a result of a student's teaching/learning experiences is specifically intended. Many things happen to students as a result of their classroom experiences. Some of these may even

fit with the highly abstract educational objectives of a program or curriculum. But such effects are not to be confused with the real objectives of instruction, with what an instructor sets out to accomplish, and to know he has accomplished.

Another way of avoiding the disadvantage posed by the requirement that behavioral objectives be quantifiable and measureable is to understand the concepts of quantity and measure in sufficiently broad a fashion. The simplest, most direct requirement of any objective is that it be specified in such a way that one can clearly determine whether or not it has been reached. In a very real sense, this notion of quantity and measure, an either-or judgment, is a thoroughly respectable level of measurement and a highly legitimate criterion.

The introduction of a behavioral objectives approach into the teaching/learning process, in addition to having advantages and disadvantages, also leads to changes in the entire conception of the teaching/learning process which, as mentioned above, can significantly enhance it. Let us look at some of these changes. They include:

1. Individualization of instruction
2. Increased use of formative rather than summative evaluation
3. The substitution of criterion-referenced evaluation for norm-referenced evaluation
4. The changes in forms of grading

None of these four follows necessarily from the specification of behavioral objectives. Each new development can and should be argued on its merits. Suffice it to say, at this point, that the four changes are seen by most education psychologists as highly desirable. If one accepts that judgment

and wishes to design the teaching/learning process in accordance with their principles, the adopting of a behavioral objectives approach will facilitate such a design.

1. Individualization of Instruction. The fact that the behavioral objectives approach is based upon the cybernetic theory, which emphasizes feedback, leads to the greater emphasis, in the teaching process, on evaluation and communication between instructor and student, particularly feedback of the results of the instructor's evaluation. The instructor sets aside certain objectives, then observes and evaluated the degree to which the student is moving toward those objectives and feeds back that information to the student to change his direction or to move him faster or slower using various ways aimed at having him arrive at these.

In its ideal form, this process becomes more individualized, more directly mutual between instructor and student. To achieve individualization, the instructor must keep in mind certain notions. One is "entering behavior" referring to the fact that students begin any class with different initial levels of ability, interest, and preparation. Knowing this, an instructor can specify objectives that reflect their initial preparation. For instance, some objectives might be bypassed if the student has already reached them, or some remedial objectives might have to be achieved before the student can begin the course proper. Such steps demand that instructors treat each student in a more individualized manner.

In addition to "entering behavior," instructors who wish to individualize instruction are cognizant of its capacity to facilitate self-directed learning. The use of a behavioral objectives approach enables the instructor to give more responsibility to students and to help them become more indepen-

dent, especially if the instructor allows students to participate in setting their own objectives and in developing individual approaches to those objectives. Though, in nursing, much of what must be learned is fixed by the demands of the profession, a very important ability which must be developed is the capacity to exercise initiative and to make independent decisions. By encouraging individual students to set their own objectives, instructors can aid them in developing these capacities.

2. Formative and Summative Evaluation. These two concepts were developed originally to describe different aspects of curriculum evaluation. They have only recently been applied to the learning process at any level and have not yet been used with reference to professional education, but their utility in elucidating classroom evaluation is readily apparent.

Summative evaluation of learning refers to the instructor's traditional practice of gathering information for the purpose of making a terminal judgment about a student which is then expressed as a grade. The instructor uses tests and other assessment procedures to assist him in judging whether or not a student should be certified or not.

Formative evaluation also involves gathering information about a student's performance; but then, rather than holding it until the end of some specified period and using it as the basis for a decision, the information is fed back to the student as soon as possible. In this way it becomes a reaction by the instructor to what the student has done, with the intention of bringing him closer to a particular goal. It sees the instructor as evaluator/collaborator with the student rather than as evaluator/judge. The cybernetic view is that control is a function of systematic feedback. In teaching/learning, formative evaluation serves the feedback function and is both more beneficial

to student progress and a natural outgrowth of the behavioral objectives approach. Indeed the very process of setting objectives, specifying procedures, and assessing performance is incomplete without feeding the assessment results back to the student. Again it must be stressed that using formative evaluation, like taking entering behavior into account, or encouraging students to participate in setting course objectives, is more demanding of the instructor. Its effects, however, may well justify the extra effort.

3. Norm Reference versus Criterion Reference. Most teachers employ traditional testing procedures in evaluating students because they are the ones that are most familiar. These compare students with each other in a classroom and each person's achievement is measured in terms of how well he does in relation to others in the same setting. This approach, known in educational psychology as a norm-referenced approach, is portrayed most clearly by the practice of grading on a curve. The norm against which each person is judged is the average performance of all in that class. Such a procedure assumes that the abilities of the students are randomly distributed, i.e., a few with great ability, a few with very little, and most with a moderate amount. It also assumes that there is a fixed amount of time for student exposure to instruction, usually three fifty-minute periods per week for 16 weeks; and that the form of instruction is of a single type for the whole class. These assumptions of norm-referenced evaluation imply also the practices of traditional instruction.

A contrasting approach, known as criterion-referenced evaluation compares a student's performance with a relatively fixed standard -- most often a minimal level of competence. This approach also makes assumptions about classroom learning, but they are very different. It is assumed, for instance,

that virtually everyone in the class will attain the desired level of competence. Then, rather than simply accepting a uniformly low level as the minimum, it further assumes that both the amount of time required and the techniques used to arrive at the criterion will vary. A relatively simple principle conveys the essential difference between the two approaches. If time allotted and methods of instruction are held constant, achievement will vary in a manner that is highly correlated with general ability. If, however, time and method are allowed to vary, achievement will be constant and will have little or no relationship to general ability.

The specifying of behavioral objectives can make the use of criterion-referenced evaluation easier and more natural. The objectives become minimum competence levels, approachable in different ways and requiring different amounts of time to achieve. Assessment of student performance is at all times clear and straightforward -- either he has reached the criterion (fulfilled the objective) or he has not -- and the instructor's judgment can be immediately fed back to the student, facilitating his next steps.

For training professional nurses, the criterion-referenced approach using behavioral objectives has an added cost-effectiveness benefit. Society demands certain minimum standards of competence in those who are agents of medical care. The amount spent on developing these competencies is very large for each individual trained, and the failure of anyone to reach the goal of certification is a definite loss to society as well as to the individual. Any approach to the training process which will decrease the numbers who fail represents an enormous saving of societal resources. If it were possible to assume that each student nurse will have maximum opportunity, once admitted, to complete the training program successfully, this saving could be realized.

Present practices in both medicine and nursing call for very intensive selection procedures to weed out those with little potential. Coupling such practices with criterion-referenced evaluation, with its concomitant emphasis on varying the time required and the instruction procedures used, could go a long way toward assuring that those selected will, in almost all cases, emerge as competent professionals.

4. Changes in the forms of grading. Adopting the behavioral objectives approach can open up new avenues of certification which minimize the adverse characteristics of, and increase the amount of, information conveyed by traditional grading practices. As has been shown, the traditional approaches to grading establish a competitive, and often anxiety-provoking atmosphere in the classroom. This often induces students to concentrate on memorizing what they believe the instructor wants to hear, which may or may not be related to the objectives of the course and the goals of the program. In addition, the grades which are given provide largely illusory information to those who certify the professional nurse, since it is not at all probable that instructors mean the same thing when they use the same grade. Demands differ, standards differ, and instructors differ, yet grades all look the same.

An alternative method, suggested by the behavioral objectives approach, is to provide for both the student and for those who must attest to his capability (and depend upon it) a profile of competencies which the student has demonstrated. For example, one objective of the nursing curriculum is to develop in the student the capacity for "assessing the health status and health problems of individuals." If this can be specified in behavioral terms, a student successfully developing such a behavior pattern can have that fact recorded as part of his profile. I would contend that such a profile would

tell the student and society far more about his competence than would an "A" in Course X, Assessment of Health Problems.

The notion of a profile of competencies to replace a transcript of grades is growing more popular, especially in higher education where adverse reactions to grading and the complexities of different curricula have made traditional approaches practically meaningless. People are beginning to ask for some kind of statement providing complex information about what a person can and cannot do when he finishes a program. What objectives have been achieved? What objectives have not been achieved and remain to be sought at another level?

Conclusion

Let me leave you with a few points that may be of help in developing your application of behavioral objectives during this institute:

1. At the beginning, when learning how to write objectives, it is best to start with simple cognitive ones. But as your skills increase, it is equally important that your development of objectives not end there. Teaching/learning is a complex process and your objectives should reflect this even as they strive for specificity and clarity.

2. An important kind of learning for all students, especially nurses, is the subtle socialization by which attitudes and values related to health care are inculcated. Student nurses learn what it means to be a nurse from watching those who train them -- in the classroom and in the hospital. For the instructor, this means that what she <u>is</u> may be more important than what she does. She serves as a model for students who will tend to emulate her rather than merely to assimilate the ideas she seeks to convey. An instructor skilled in the processes of the behavioral objectives approach can, by

her actions, persuade students of their validity and applicability.

3. Care must be taken to avoid the notion that this method is a panacea, no matter how interesting it appears and no matter how it might seem to work. It doesn't solve all the problems of teaching. The behavioral objective approach provides the teacher with a conceptual tool, a way of intensifying her ability to observe what is going on in the classroom and to make that classroom more effective. The instructor is an artist and many factors will influence how and when the tool will be appropriate.

4. The final point -- a caveat -- is that the instructor's task is not made easier by the behavioral objectives approach. On the contrary, it becomes more difficult as instructors concentrate on analyzing and systematizing practices which may have become habitual. Nothing in teaching/learning is automatic and whatever negative reputation the behavioral objectives approach has is due to its being seen as a way of taking all the work out of teaching. Nothing could be more of a caricature than the thoughts of one who concludes: "O.K. I've got this set curriculum and these objectives. They're here in black and white, so my course is ready and I can think of other things." This is perhaps the surest way to discredit the approach and keep it from working.

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Chapter 4

CURRICULUM DEVELOPMENT

Robert S. Harnack

During the next few days we will be in the process of making decisions. We will make decisions with regard to instructional objectives. Since we are going to write these objectives, we will need to know the criteria which relate to making decisions about objectives. We need to determine which objectives are worthwhile.

Notice that the word "value" makes up part of the word "evaluation." What is the value of the objective? How do we determine what is of value? Now, I'm going to refer to a diagram (see Figure 1, originally on blackboard) which represents the factors that influence educational decisions. Perhaps this diagram and its factors can help explain what is involved in identifying instructional objectives and their related environment for learning. As you can see from the diagram, one can't specify the EDUCATIONAL GOALS of the School of Nursing--i.e., the large overall goals which direct the actions of a total faculty--without taking certain factors into consideration.

Critical Thinking. For example, a guiding philosophy for the School of Nursing should be concerned with the ideal of the student achieving reflective and CRITICAL THINKING about the work that she does. I understand the nurse to be a medical professional who has specific tasks, but who does not do these tasks in a routine fashion. Rather, the nurse is a true professional who must apply critical thinking at almost every stage of the game. Critical thinking is a very important factor. It is certainly one of the elements useful for defining an educational goal.

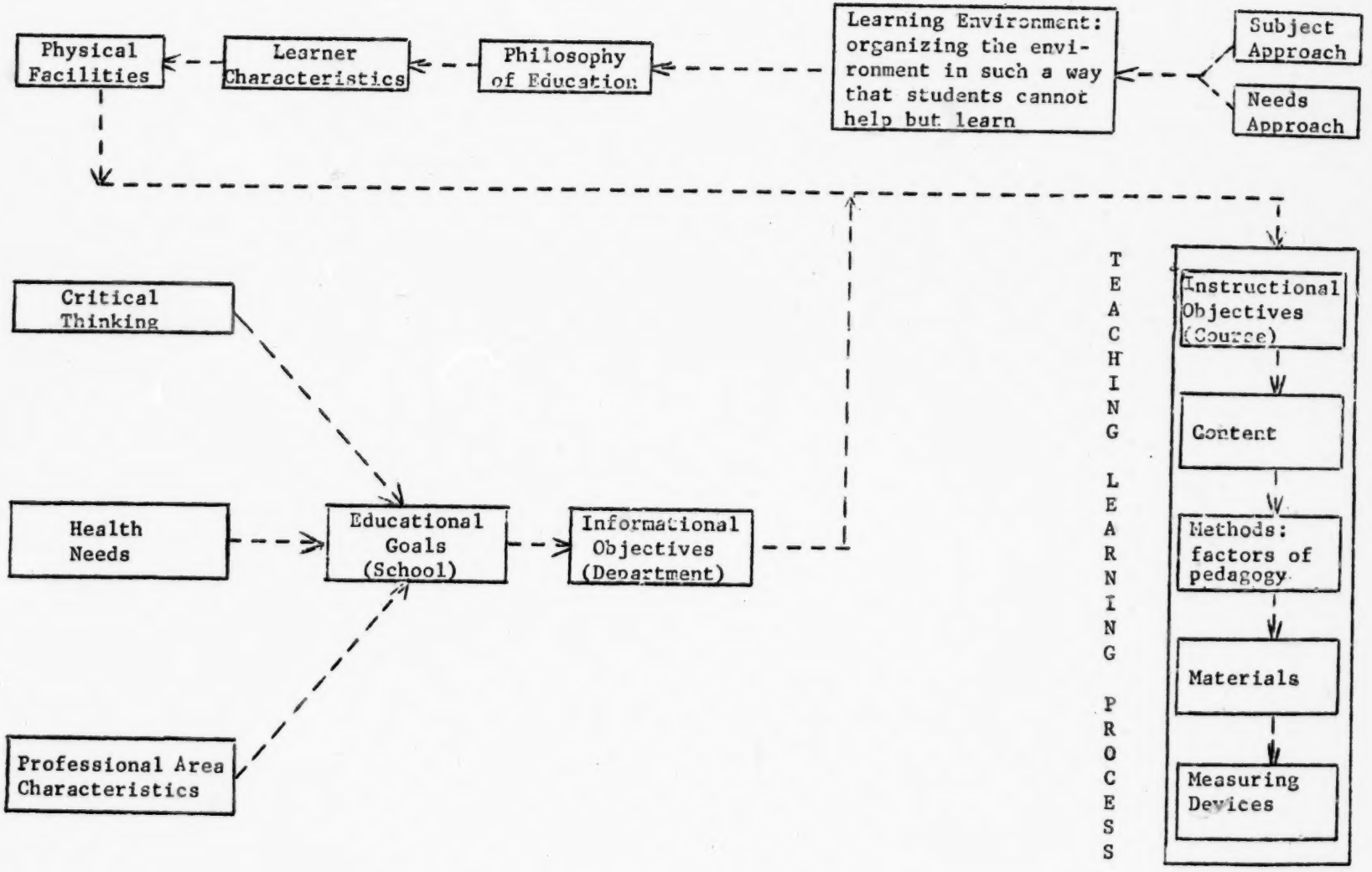

Figure 1 Influences on Bases for Decisions

Health Needs. Second, the HEALTH NEEDS of society are also related to the educational goals of nursing. It is obvious that the health needs of society have changed along with methods of disease prevention and treatment.

Professional Area Characteristics. The third element relating to educational goals that I have diagrammed is the PROFESSIONAL AREA CHARACTERISTICS. This factor is concerned with making a student nurse a professional nurse, apart from critical thinking. Critical thinking could have been included as a professional characteristic, but I separated it because of its unique importance. There are still many other characteristics which make the nursing profession a true profession. My main point, then, is that we must look at three areas: critical thinking, health needs, and professional characteristics to help us to determine the broad educational goals of the nursing program.

The five boxes at the right-hand side of the figure symbolize the parts of the TEACHING-LEARNING PROCESS. A professional educator must think about each of these areas when putting together a LEARNING ENVIRONMENT. An educator who tries to be professional must be concerned with the INSTRUCTIONAL OBJECTIVES she is trying to accomplish, the selection of CONTENT, and the kinds of METHODS to be used. She must decide whether or not she will work with an individual, a small group, or a large group. If she decides on a large group, how will she work with that group? If she decides on an individual, how will she work with that individual? What MATERIALS will be used? Will she use a resource person? Quite often, technicians used in nursing education haven't been taught how to be good resource people; as a result, the student doesn't benefit. Finally, the last box under the teaching-learning process represents all the MEASURING DEVICES that can be used to find out to what extent the behavioral objectives have been achieved. You can see the need and possibili-

ties for unlimited decision making in all this.

Continuing to look at these areas and the many decision-making possibilities involved, there are hundreds of thousands of pieces of content that can conceivably be woven together for the benefit of the student. In like manner, there are thousands of ways from which one can choose a methodology. For example, while I am talking to you, now, I am also using the blackboard to show a relationship. At the same time, I am worried about the time of day, and I am watching carefully to make sure that nobody falls asleep--if I can help it. I'll change the pitch of my voice or the tempo to stop you from dozing off. This is part of the pedagogy, the type of thing about which we do not hear enough these days in education. There are thousands of tricks of the trade in education. But, these are not just "tricks." Such decision making by the teacher shows a concern--a basic concern for creating a learning environment that will help the student learn. To continue, there are many more kinds of instructional materials than the simple textbook. For example, fascinating and intelligent resource people together with helpful and available programmed learning materials are two of the possibilities that come to mind. Whenever we think of measuring devices, typically we think of paper-and-pencil tests. But, paper-and-pencil tests are insignificant when compared to some of the behaviors we could study by checking the possibilities of creating immediate and longitudinal studies.

We need to examine the teaching-learning process carefully. We need, therefore, to write behavioral, instructional objectives keeping this total process in mind. At the same time that you write objectives, you must consider how the objectives will be implemented, how the learning environment will be created, and what factors will affect its success. When writing

objectives, we cannot ignore these nagging questions: What will our content be? What might the pedagogy be? Consider again the possible methodologies and procedures we might use. What might some of the instructional materials look like? Could we use other types of evidence of achievement such as rating scales, checklists, objective tests, essay tests, or oral situations? Perhaps thinking about all these things, to repeat my point, gives us a better understanding of what our behavioral objectives might be.

What influences decisions between the broad EDUCATIONAL GOALS and the more specific INFORMATIONAL OBJECTIVES? We need to look at the rest of the diagram in order to examine other criteria whereby we can judge whether an objective is of value. Notice that PHYSICAL FACILITIES are represented in the upper left hand corner of the chart. Simple as this point may seem, facilities certainly have a bearing on the type of objectives that are written. For example, in this room we have poor lighting conditions. The blackboard is useful, but not all people in this room have a good view of it. We might have been able to use an overhead projector, but there are no shades in this room. A film or 2 x 2 slides would be ruled out as instructional materials since the room can't be completely darkened. Another item in the chart refers to LEARNER CHARACTERISTICS. Stated very simply, the characteristics of the learner will influence our teaching procedures. Again, certain questions can be asked: What motivated the students to enter the nursing profession? What backgrounds do they have? Do they come from various social classes? Will this make a difference in how you proceed? Perhaps some students won't get much from reading or from listening to lectures. Should they, therefore, be weeded out by the mere lack of variations in your own teaching-learning situations? This point relates to Dr. Francis' point that

not everyone is up to the level of running a four-minute mile. It is conceivable that for an individual to learn, a whole series of events will have to be modified. Dr. Francis emphasized that we need to pay strict attention to the characteristics of each individual learner. This relates to his point about individualization of instruction.

The PHILOSOPHY that I have followed in my own teaching is that each person must be educated as an individual person. I tell my own students that I am concerned with each person as an individual. My students come to me with a set of interests and needs based on practical experience. Then, the student is asked to define the behavioral objectives which he wants to accomplish within a particular unit or topic. Again, let me repeat that he is obviously interested in the topics I teach or he would not have selected them. Since your students do have an interest in the profession of nursing, they probably have distinct individual needs, interests, and desires which will dictate specific objectives they might like to study. I also tell my students about things that I am studying within the topic. So, together--but individually--we work out how it is that we, as a group, are going to learn as individuals. As I see it, my job is to help my students to learn as individuals. That's my professional concern. I've also learned to give my students my home phone number because individuals in a course of study can't stop thinking at a specific time, say quarter to ten at night. They can call me if they have a problem or a question, and we'll get it settled. When we hold classes, the topics are chosen by the people in the class who want to hear about another student's topic since it has general relatedness to all topics and the general center of interest. I've found this procedure fascinating. I've never witnessed so much learning take place in such a short period of

time. The problem solving, the digging, the seeking, the learning doesn't stop at the end of the semester. Most of the objectives that my students write and choose are objectives that can't be satisfied in 15 weeks.

Let me stress that true individualization of instruction cannot be achieved until such time as the student has the right, the opportunity, and the help to identify her own educational objectives. Of course, along with this, the teacher needs the "know how" as a teacher to help that person identify and satisfy each individual objective.

There are different ways in which we can organize our TEACHING-LEARNING ENVIRONMENT for the purpose of facilitating student learning. It is important for us to organize our environment so that each student seeks to learn, wants to learn, cannot be stopped from learning. How do we create an environment so that each student can help herself to learn, wants to learn, so that nothing can stop her? If we know how to state instructional objectives and relate them to a philosophy of science, the health needs of a society, and the characteristics of the nursing profession, and if we want to show more concern for pedagogy, we should be intelligent enough to recognize that there are different curricular approaches that can be used for purposes of learning. The typical approach that is used by most schools of nursing is called the SUBJECT-MATTER AREA APPROACH. (You should understand at the outset that I want to improve the subject-matter area approach, not destroy it.) Very few people have learned the second approach that I'm going to discuss: the needs approach. Because so few people have learned the second approach, we have begun a process over the past 50 years of watering down the subject-matter area approach trying desperately to teach a doubling and redoubling of knowledge to large groups of people rather than creating a situation in

which we can deal with individuals in terms of their interests--thereby assuring the learning of the increased amounts of knowledge. When the student wants to learn, and when the amount of knowledge to be learned is minimal, the subject-matter area approach is definitely needed. But there is another approach which I would like to have you consider, which can help you and your student arrive at the conditions just stated above.

Keeping in mind instructional objectives--both specific objectives and broad educational goals--it would be possible for this faculty to design an educational environment that could "trap" the student into learning more than she could ever learn before. As a result of newly developed interests growing out of a new environment you would create, she could identify educational objectives and purposes that would, in turn, cause you to build a new set of teaching-learning situations. Try to visualize a school environment that would develop in student nurses a series of needs, interests, wants, and desires. This is called the NEEDS APPROACH. I can give you one short example to compare the needs approach with the other.

Some of you are familiar with the Western Reserve School of Medicine. Around 1957, this medical school instituted a new curricular approach. When I was there for a short visit, I had the opportunity to talk with the people involved--the professors, the deans, and some of the students. Basically, the program began like this: When the freshman medical students reported, they were given a white coat, a stethoscope, and the title "Doctor." This unschooled student was then introduced to his first patient. Now, I think that this was the nth degree of careful curriculum planning of instructional materials because this first patient had to be a female, a mother, a wife, and three months pregnant. Now, that's curriculum planning. This woman had

a husband and other children at home. The student was getting acquainted with what they called the "Family Clinic." The student was introduced to the wife who was going to have a baby in six months, but, more importantly, he was meeting "his" family for whom he would be responsible for the next two years.

I talked with some of the students about their experiences. At the beginning, they were frightened. They didn't know anything, but their teacher, their preceptor, helped them. Often the student would say to the teacher, "I don't know enough to do that. Will you help me?" The point of view of the teacher was, "You have a real problem here. You know that this woman will be back in a month for another examination. In six months, she's going to have a baby. According to all our reports, the delivery will be normal. You will be the doctor in charge. You'd better get ready. Of course, I'm here to help you at every step along the way."

The student develops new interests, needs, wants, and desires related to the family clinic. He studies, and he learns. He is guided by the staff. I asked a student finishing his second year if he studies for certain national board examinations. He said, "Not really. In fact, my roommate, who was under the old program, criticized me for not cramming." I asked this student why he didn't cram, and I'll never forget his answer. He said, "I felt I knew it all." Isn't it wonderful for a student to say that!

What about the subject-matter area approach? Western Reserve retains the subject-matter areas for study and research. But to educate the medical student, the faculty selects broader units related to comcepts, themes, and topics that serve as centers of interest related to the role of the medical

doctor. For example, it is very important to learn about the birth of a baby and to learn how to take care of that new infant. That topic could be a basic unit in itself. Another unit, as I recall, dealt with the chest cavity, and so forth. Specific instructional goals are such that it is necessary to select content from many subject-matter areas.

Now, it took this faculty three years of planning. During that time, many distinct subject-matter area specialists became slightly insecure because they thought they were going to lose their birthright. Some thought that students would no longer be interested in their distinct areas. But, this did not happen. Actually, in such cases in medical schools, engineering schools, and the like, research study in distinct areas becomes a permanent interest. As a result of this type of approach, students want to delve into "things" that bother them. The student now becomes a researcher and a divergent thinker. He begins to ask questions. He goes beyond the existing body of knowledge. He wants to know what happens next.

Whenever you find a school situation where the amount of knowledge is increasing rapidly, as it is in medicine, you will find a concern on the part of teachers to identify an environment that teaches more in the same period of time. This is what happened at the Western Reserve School of Medicine. There is no reason why you couldn't use this concept to improve teaching and learning to educate better nurses.

One of the items that I did not talk about is the process of curriculum planning and development. We in curriculum planning worry about this process a great deal. To help us remember the crucial concepts in this process, we refer to a group of words, each beginning with the letter "C." We need

coordination, communication, and cooperation. If we have these three, then we'll help people look at the big comprehensive picture. We must study the comprehensive quality of the curriculum of the School of Nursing. There is another "C" that pertains. Curriculum planning must be continuous. Finally, curriculum planning must be concerned with concrete details, concrete curricular details, curricular problems, and the solving of those problems. To develop a better teaching-learning environment, ask thousands of concrete questions.

In fact, to develop a better teaching-learning environment, you must plan cooperatively over a long period of time. You must devote special time to re-think the curricular experiences you are providing for your students. You owe this to each individual student in your program. The precise writing of suggestions for developing better teaching-learning situations is your next step. Such curriculum planning will require careful professional decision making.

Chapter 6

CURRICULUM DEVELOPMENT IN THE SCHOOL OF NURSING: 1950-1970

Ellen T. McNicholas

In this discussion I shall describe some of the highlights of curriculum development in the School of Nursing for about the last twenty years, especially in relation to development of objectives. I believe we need to go back to 1950 to the early development of the undergraduate curriculum. First of all, I should like to give credit to the faculty who had the vision to see the need for a university baccalaureat program in this community. Prior to 1950, a great deal of work had been accomplished relative to surveying community needs for products of the program, conferences with the University Chancellor, conferences with members of other disciplines who would be involved in the curriculum, development of contracts with community agencies which would be used as laboratories, and so on.

A curriculum design had been drafted. This design was not atypical of college and university curricula at that time. I believe some of you will be shocked to learn that in one area (medical-surgical) the content was allotted 600 hours. Other areas of the curriculum--Maternal, Child, Mental Health, and Psychiatric Nursing were allowed 300 hours each. In addition, the student was in laboratory twenty-four hours a week. Early in 1951, we received the full support of administration in revising the curriculum design before it was implemented. Our belief was that curriculum planning was to be viewed as a continuing activity rather than a definite plan for a set number of years. To sharpen our understanding of the nature of the student and what the student needed to know in order to function as a professional nurse, we developed our philosophy and objectives. The very nature of nursing

calls for critical thinking and problem solving, so our objectives were geared towards these goals. It was amazing how we were able to reduce the content, which was mainly concerned with subject matter and facts. A good deal of the content was also concerned with the rare and exotic conditions rather than the health problems of a community in the United States. In these early days of curriculum development, we used among others the writings of Ralph Tyler and Ole Sand. As a matter of fact we used Tyler's model (Table 2) in developing behavioral objectives. You will note that these objectives reflect the cognitive, affective, and psychomotor skills. I believe it was sometime later that we dropped the category "Affective Skills" because we could not, according to the literature and accrediting bodies, evaluate them. We decided to attempt to meet the affective objectives through the School climate and the person-to-person relationship between student and faculty and the university community.

We believed that the program had twin overall goals to prepare the student for life and for making a living. We again met with faculty in the areas of English and the behavioral and physical sciences to strengthen those components and to eliminate overlapping in order to provide economy of learning for the student.

In 1957 we tried using Bloom's Taxonomy as a guide for cognitive and psychomotor skills. We found it difficult and often referred to those meetings as Bloom's Day. I believe it was our own lack of understanding of the Taxonomy that put it in disfavor with the group.

From 1950 on we had what we believed was a built-in system of evaluation. Anecdotal records were kept on all students. At the end of each semester

Table 2

Illustration of the Use of a Two-Dimensional Chart in Stating Overall Objectives for a Basic Program in Nursing*

Behavioral Aspect of the Objectives	Content Aspect of the Objective				
	The Nurse as a Person and as a Citizen	The Body of Scientific Knowledge	The Nurse Working in a Health Agency with others	The Plan for Individual Nursing Care	The Nurse's Heritage and Responsibilities
Understanding	X	X	X	X	X
Critical Thinking	X	X	X	X	X
Communication Skills	X	X	X	X	
Habits	X		X	X	
Attitudes and Appreciation	X	X	X	X	X
Interests	X	X	X	X	X
Motor Skills				X	

*Based on chart developed by Ralph W. Tyler, Basic Principles of Curriculum and Instruction, Chicago: University of Chicago Press, 1950, p. 32.

students evaluated each course. Student input was always considered an important element of the curriculum and a valuable guide in helping to determine whether objectives were being met.

Faculty were impressed at the time by the use of the case method (as practiced at Harvard) to further strengthen the problem-solving approach. Instructional files were developed which included actual patient-family cases, patient portraits, laboratory guides, mid-term and final examinations, and so on.

In 1958 following a research project with the junior group, we discovered that objectives could be met by shortening and strengthening the time students spent in the laboratory. Helping students (through pre- and post-laboratory conferences) to set up their own objectives and to evaluate how they met the objectives resulted in a much more valuable learning experience. On the basis of this project, laboratory hours were reduced to eight hours per week.

About this time faculty at the University of Washington were revising their undergraduate curriculum, which was then a five-year program. The director of the curriculum research project was Dr. Ole Sands. Dean Tschulin had written to us relative to their study, requesting information on innovative approaches to our curriculum design. She was especially interested in the objectives of our program and specifically the objectives which we believed were best met in the laboratory situation. It was a source of encouragement and stimulation for the faculty to share our findings and ideas with another professional School a continent apart.

In 1961 the faculty became deeply involved in attempting to look at man as a whole and to further break down the barriers among different areas of the

curriculum. The goal was to move toward an integrated curriculum with the selected objectives being met in any area that offered the student the learning experience necessary to meet the selected objectives. To further the economy of learning for the student, faculty again studied the essential content necessary to meet the objectives.

Because of our concern about gaps in the students' learning (using the integrated approach), we requested consultation with faculty in the School of Education. Dr. Fall and the late Dr. Land participated. It was their suggestion that we consider coordinators whose function would be that of protecting the student from gaps or overlapping in learning experiences. Progress toward the integrated curriculum might have been hampered by the rapidity of the change and the drastic reduction in content together with the reduced teaching required by the faculty and the increased responsibility for learning placed on students.

Chapter 6

SUMMARY OF PANEL PRESENTATIONS BY GROUP LEADERS

Sylvia E. Hart

Prior to the Workshop, group leaders met on several occasions to analyze overall program objectives in relation to categories of the Bloom Taxonomy. After several hours of deliberation, consensus began to emerge and each objective was assigned a number corresponding to a level specified in the Taxonomy. It became apparent that what was lacking were objectives in the affective domain--these relating to the Krathwohl Taxonomy. In an attempt to stimulate discussion and possibly to modify overall program objectives, several objectives in the affective domain were developed by the group leaders and were presented to the faculty attending the Conference as possible additions to the overall objectives already approved by the faculty of the School of Nursing.

During the morning session the panel gave a summary of the work it had done and provided the opportunity for the total audience to participate by analyzing several program objectives. In effect the presentation was an exercise having two purposes: (1) to ascertain whether consensus on the classification of objectives could be reached by a large group, and (2) to provide a model and practice in advance that would help prepare the small groups to undertake the analysis necessary in the Workshop situation. This was a very satisfying experience for all, and we discovered that it was, in fact, possible to arrive at a majority opinion about the classification of objectives.

As a result of the preliminary work of the group leaders and upon completion of the morning session when the audience participated in the analysis of program objectives, the objectives were classified according to the Bloom

and Krathwohl Taxonomies. The number following each of the first twelve objectives is the classification number corresponding to a category of the Bloom Taxonomy.

The graduate of the baccalaureate program in nursing is able to:

1. Assess the health status and health problems of individuals, families, and communities. 4.2
2. Identify nursing needs of patients and families and establish a nursing diagnosis. 2.2, 5.0
3. Implement nursing techniques with safety and economy of effort and motion. 3.0
4. Utilize problem-solving techniques in the solution of nursing problems. 5.3
5. Recognize opportunities for teaching and utilize principles of learning in the teaching process. 5.2
6. Seek and utilize goal-directed communication techniques. 5.2
7. Utilize community resources in dealing with promotional, preventive, curative and rehabilitative aspects of health care of individuals, families, and groups. 5.2
8. Work collaboratively in a professional relationship with members of other disciplines. 3.0
9. Demonstrate knowledge of the concepts of planned change and function as a change agent. 2.2, 2.1
10. Assess and contribute to the alteration of environmental forces that influence the health of patients, families and society. 4.2
11. Participate with appropriate guidance and supervision in research for the improvement of nursing care. 4.3

12. Promote improvement of health care through participation in community action programs. 3.0

The objectives listed below are the additional objectives proposed by the group leaders. Except for the first of these objectives, which is in the Cognitive Domain and is classified according to the Bloom Taxonomy, these objectives are in the Affective Domain and are classified according to the Krathwohl Taxonomy.

Additional Objectives (proposed)

The graduate of the baccalaureate program in nursing:

1. Knows and understands the theories and principles that underlie nursing practice. 1.32, 2.10 (Cognitive Domain)
2. Is committed to the nursing profession. 3.3
3. Has internalized a philosophy of life that reflects the worth and dignity of man. 5.2
4. Sustains interest in, and responds positively to, current social and environmental issues. 3.2
5. Values one's own contribution to the delivery of health care as well as the contributions of other health professionals. 3.1
6. Is sensitive to verbal and non-verbal communication to others. 2.2
7. Is ready to revise judgements and change behavior in light of new knowledge. 5.1
8. Is committed to continued personal and professional development. 3.3

Faculty then joined small groups in which they were interested. Each small group, which had been designated by a course number was asked not only to categorize course objectives according to the Bloom and Krathwohl Taxonomies

but also to generate any other objectives that did not seem to be reflected in those existing but which were indeed a part of the overall goals of the course. With this charge in mind, the groups went about their respective tasks.

Chapter 7

REPORTS FROM SMALL GROUPS

Each group met for two sessions and worked together for a total of about four to six hours. The task for each group was to classify the objectives for the course assigned to the group, to modify or delete existing objectives, and to develop additional objectives in order to make them as explicit and behavioral as possible. Needless to say, this task was not completed during the Workshop[1] but was continued by the faculty in the ensuing weeks. By early spring the group had completed their work. The revised course descriptions and objectives for required nursing courses reflect the continuing work of the several groups. In the list of names for each group, the asterisk (*) denotes the group leader.

N 103 Human Growth and Development

D. Anderson
M. Brocking
A. Elliott
C. Getty
V. Harmon
K. Harren
S. Hart*
H. Harvey
D. Juenker
J. Kohl
R. McGrorey
S. Rogers
J. Thompson

Course Description

This course includes content which enables students to arrive at an understanding of those aspects of human development which are basic to the health and welfare professions. It considers selected factors which influence growth and development and how these factors affect the individual's functional abilities through the life span.

Objectives

Upon successful completion of N 103 the student:

1. Comprehends selected structural and functional theories and principles related to human growth and development from conception through senescence.

[1]It should be noted that Dr. Rott's evaluation of selected nursing course objectives (Chapter 8) is based only on information available at the time of the Workshop.

2. Comprehends selected psychosocial theories and principles related to human growth and development from conception through senescence.

3. Comprehends the interplay among the structural, functional and psychosocial aspects of human growth and development from conception through senescence.

4. Utilizes the knowledge of interplay among the structural, functional and psychosocial theories to describe development behavior from conception through senescence.

5. Is aware of the uniqueness of one's own development and related behavior as well as that of others.

6. Is willing to tolerate the behavior of other individuals.

7. Is ready to re-evaluate one's own behavior in the light of increasing self-awareness.

N 201-202 Introduction to Nursing

M. Aroskar	A. Glenister	M. Sharrow
E. Barbee	P. Gorzka	G. Smith
M. Brogan	L. Hoff	J. Spero*
J. Bumbalo	C. Kneisl	M. Werner
R. Caughill	J. Schneider	

Course Description

N 201 and 202 are introductory nursing courses which include theory and laboratory experience based on the premise that during the life process, man is constantly interacting with and adapting to his environment. In order to assist in this process, the nurse must appreciate man's uniqueness and integrity in relationship to his environment, and his adaptations in order to maintain life, health and comfort. Fundamental to the nurse's role in assisting man's adaptation is the utilization of measures to assess and promote health and well-being.

Self-awareness and professional identification are basic to the nursing process. The nurse must perceive herself as an individual therapeutic agent and as a responsible member of a profession. An essential component of the nursing process is effective communication, with patients, families and members of the health team.

Objectives

A. Professionalism

1. Knowledge of what a profession is and its responsibilities e.g., confidentiality, charting, legal aspect.
2. Knowledge of responsibilities of a professional person.
3. Knowledge of how the profession of nursing develops.

4. Knowledge of existing attitudes and values of professional nursing.
5. Develops a concept of professional nursing.
6. Utilizes a concept of professional nursing behavior in the clinical setting.
7. Knowledge of a broad view of human sexuality.
8. Knowledge of the concepts of femininity and masculinity and their impact on self as a professional, as well as on patients cared for.

B. Socio-cultural concepts

1. Knowledge of the effects of socio-cultural attitudes and values on behavior.
2. Awareness of the effect of his own socio-cultural attitudes and values on behavior.
3. Incorporates concepts of socio-cultural attitudes and values in interaction with patients and family and/or significant others.
4. Identifies the effects of family structure and/or significant others on individual behavior.

C. Communication

1. Knowledge of the principles underlying interpersonal relationships.
2. Knowledge of the principles underlying therapeutic use of self.
3. Knowledge of the principles underlying effective communication, i.e. interviewing, role of interviewer and methods of interviewing.
4. Knowledge of principles and methods of teaching.
5. Knowledge of the steps in problem-solving.
6. Application of knowledge of the principles underlying effective communication skills:
   a. Identifies goals for communication with patients and families and health team members.
   b. Interviews for fact finding.
   c. Utilizes interviewing techniques, i.e. asking questions, clarification.
   d. Shares results of fact finding and observations with appropriate health team members.
   e. Demonstrates awareness of self as a group member.
   f. Demonstrates awareness of self as a therapeutic tool.
   g. Identifies blocks to communication.
   h. Evaluates effectiveness of communication.

d. Psychomotor skills

1. Knowledge of principles underlying psychomotor skills, i.e. bathing, vital signs.
2. Knowledge of techniques utilized in performing psychomotor skills.
3. Explains principles underlying psychomotor skills.
4. Demonstrates techniques utilized in performance of psychomotor skills.
5. Applies the appropriate psychomotor skills as determined by patient needs or assessment.
6. Evaluates effectiveness of the application of psychomotor skills.

E. Appraisals

1. Knowledge of the skills used in nursing observation.
2. Knowledge concerning physical appraisals.
3. Knowledge concerning psychological appraisals.
4. Knowledge concerning socio-cultural appraisals.
5. Knowledge concerning environmental appraisals.
6. Utilizes the knowledge of physical, psychological, socio-cultural and environmental appraisal in giving nursing care.
7. Utilizes principles and concepts of human growth and development in assessing, planning and giving nursing care.
8. Validates the accuracy of appraisal with faculty member and/or other resources.
9. Evaluates nursing care based on the use of health appraisals and observations.

F. Prevention (Promotion of Health, Prevention of Illness)

1. Knowledge of levels of prevention in the natural history of disease model.
2. Knowledge of measures that can be applied to promote health and prevent illness in the individual, family and community in relation to nutrition, exercise, recreation, etc.
3. Utilizes measures to promote health and prevent illness in the individual, family and community in relation to nutrition, exercise, recreation, etc.
4. Knowledge of the roles of health team members in promotion of health and prevention of illness.
5. Knowledge that communities are organized to deliver health care at the three levels of prevention to individuals, families and other community groups.
6. Awareness of health as a relative state.
7. Knowledge of aspect of the physical and social environment that directly and/or indirectly affect the health of individuals, families and communities.

G. Stress

1. Knowledge of the physiological and psychological mechanisms of stress,
2. Knowledge of the overt physiological and psychological manifestation of stress.
3. Identifies through observation and communication the physiological and psychological mechanisms that are used to deal with stress.
4. Identifies through observation and communication overt manifestation of physiological and psychological stress on individuals in various age groups, the family and the nurse.
5. Knowledge of nursing measures that are utilized to alleviate stress in the individual and his family and/or significant others.
6. Utilizes nursing intervention in order to alleviate stress with the individual and his family and/or significant others, e.g., use of psychomotor skills, therapeutic use of self.
7. Evaluates effects of nursing intervention on the individual and his family and/or significant others undergoing stress.

N 301 Comprehensive Nursing Care of Children and Adults

L. Baker	M. Frainier	E. McNicholas*
J. Campbell	M. Fussell	K. Maurer
K. Cerato	D. Hochne	N. O'Hara
K. Daniels	S. Illig	I. Reed
J. Downs	M. Larsen	J. Sodergren

Course Description

N 301, Comprehensive Nursing Care of Children and Adults is a one-semester, eight-credit course, including laboratory experience in Child and Adult Health Clinical facilities. Theoretical and clinical learning is based on knowledge gained from prerequisites and concurrent courses in nursing and the behavioral and natural sciences. This course focuses upon nursing practices that assist the individual with multiple pathophysiological and psychosocial problems to achieve his maximum well-being. The stress of illness as it affects the developmental process from infancy to senescence is included in theory and practice. The problem-solving approach is used to meet patient's health needs within the context of the family situation. Mental and Community Health concepts are integrated throughout the course.

Objectives

Students who have successfully completed N 301 are able to:

1. Identify nursing problems for patients who have interference with: tissue continuity, fluid and electrolyte exchange, gas exchange, nutrition and elimination, sensory-motor function and regulatory mechanisms.

2. Apply theoretical knowledge from the natural and behavioral sciences in caring for patients with the above nursing problems.

3. Analyze the interrelationships of the multiple pathophysiological and psychosocial responses which influence the health status of the patient.

4. Formulate a comprehensive nursing care plan in relation to identified N 301 health problems.

5. Implement a comprehensive nursing care plan based on priority of patient's needs.

6. Modify the nursing plan according to the changing health status of the patient.

7. Assumes initiative for personal and professional growth.

8. Recognize effects of own feelings and communication in performance of nursing actions.

N 302 Nursing in Psychosocial Disturbances

R. Alonso	E. Hall	M. Simon
M. Boles	O. Johnson	M. Soukup
R. Boucher	M. Kennedy*	D. Taylor
B. Brooks	K. Klug	D. Young
R. Elder		

Course Description

N 302, Nursing in Psychosocial Disturbances, is a one-semester, four-credit course, including laboratory experience, offered during both semesters of the Junior year. Laboratory situations are utilized for application of theories gained from prerequisites and concurrent learning. The course will focus upon nursing intervention with individuals or families who require professional assistance in adapting to stress situations, preventing maladaptive responses to stress, and promoting optimum function.

Objectives

Students who have successfully completed N 302 are able to:

1. Assess adaptive responses of individuals and families.
   a. Describe the overt and covert responses to stress in relationship to identified levels of anxiety.
   b. Describe the influences of internal and external stress upon the patterns of family interactions.

2. Formulate a plan of nursing intervention in behavioral disturbances that is based upon theoretical frameworks from the behavioral and social sciences.
   a. Differentiate between long-term and short-term nursing goals as they relate to identified patient and family needs.
   b. Describe a plan for nursing care in relationship to formulated goals.
   c. Describe rationale underlying planned nursing actions.

3. Implement a plan of nursing intervention in behavioral disturbances that is based upon theoretical frameworks from the behavioral and social sciences.
   a. Describe the utilization of nursing actions as formulated in the plan of nursing care.
   b. Describe the adaptation or modification of nursing actions in changing and/or emergency situations.

4. Describe objective evidence to substantiate an evaluation of the effects of nursing intervention in behavioral disturbances.
   a. Describe the effect of nursing actions in relationship to the formulated goals.
   b. Reformulate the nursing care plan, as necessary, on the basis of the evaluation of the effects of nursing actions.

5. Collaborate with members of related disciplines in providing comprehensive health services to individuals and families who are experiencing stressful situations.

a. Exchange relevant data with community care-givers in various settings in relationship to identified health needs of patients and families.
b. Coordinate a plan of care with the individuals identified as most appropriate to facilitate total health services.

6. Describe current and future trends in the delivery of mental health services.
   a. Assess services of community agencies as they relate to various levels of prevention.
   b. Describe community health services as they relate to adaptive responses at various developmental phases of the life cycle.
   c. Discuss projected community needs for mental health services.
   d. Discuss nursing implications related to the delivery of mental health services.

7. Describe the dynamics of group interaction as demonstrated in various patient, family and health team settings.
   a. Demonstrate knowledge of group process by describing:
      development of a group
      interactions within a group
      roles of group members
      termination of a group
   b. Describe own functions within a group as:
      an observer
      a participant-observer
      a leader
   c. Discuss own impact as a member of the group upon the group process.
   d. Differentiate between various types of groups and their respective functions.
   e. Describe the relationships between various types of groups and the ward milieu.

8. Assess own growth toward professional nursing practice related to learning opportunities which were provided by the course activities.
   a. Formulate student-centered goals which are realistic within the limitations imposed by the laboratory situation.
   b. Utilize time and available resources in meeting identified student-centered goals.
   c. Describe the effects of approaches utilized to meet student-centered goals.
   d. Describe objective evidence to substantiate a self-evaluation.

N 303 Childbearing and Family Health

S. Ames	E. Grexton	C. Lechner
R. Assell	M. Hagberg	I. Mahar
M. De Oca	M. Hoffman	R. Walsh*
C. Gartner	E. Kaiser	A. Wightman

Course Description

Theories of nursing practice in attempting to promote health in women of childbearing ages and their families will be examined. Developmental concepts that view health throughout the continuum of the reproductive cycle integrating the care for the unborn and neonate will be considered.

Attention will be directed towards a woman's reactions to self in relation to pregnancy, childbirth and motherhood; her understanding of what is happening to her and to her family in the changing family roles; and the type of care and instruction they need in order to cope with the stresses they may have during the childbearing years.

Variables to be considered as they relate to their influence on women, babies and families will be drawn from genetic, environmental, psychological, socio-cultural and economic factors including legal and ethical aspects. The interaction of nurses with other members of the health team will also be examined.

This course will include a clinical laboratory in a variety of maternal and child care settings. Much of the material concerning modes of nursing intervention will emerge in the process of discussion during seminars. Audio-visual aids and independent study will be used.

Objectives

Upon successful completion of N 303 the student is able to:

1. Utilize problem-solving processes in identifying and solving nursing problems relating to childbearing and family health.

2. Develop, implement and evaluate a plan of nursing care based on an identification of common nursing needs and multiple variables that converge to affect the health and welfare of women, their families and the community.

3. Examine the organizational structure in which maternal and infant care programs operate with consideration given to those mechanisms inherent to concepts of change.

4. Collaborate in the professional relationship with members of various disciplines who serve women and their families.

5. Utilize community resources in dealing with promotional, preventive, restorative aspects of health care of women and families.

6. Evaluate her own attitudes, values and performances in relation to personal growth and their effect and impact on maternal and family care.

Chapter 8

EVALUATION OF SELECTED NURSING COURSE OBJECTIVES

Robert K. Rott

Introduction

Before getting down to the business of behavioral objectives, I would like you to know that many of us who work in the area of performance evaluation are not behaviorists in the Skinnerian sense of the word. Rather, we are experimentalists and quasi-pragmatists who believe that the institution of education ought to be able to plan its own destiny. We cannot defend an "Alice-in-Wanderland" approach to the problems of education because many of the tools for resolving our problems are available. One of the things that we must try to do is to emphasize decisions based on educational merit, and this means that we must analyze proposed and existing programs in terms of alternatives and consequences. If we believe in the primacy of human values, then the goals of education and of programs such as your own in the School of Nursing must be made as explicit as possible. Students need to know in advance what they are getting into, what the expectations are, and how they will be evaluated.

It seems to me that those who oppose explicitness in educational goals are really attempting to avoid responsibility for future outcomes. By the same token, it is clear that the School of Nursing at SUNY--Buffalo can never be placed in such a category. As I visited each of the five Workshop groups, I saw the Nursing Faculty facing up to the tough issues ahead. I saw dedicated people designing program that is individualistic and humane by intention rather than by accident. It is my strongest wish to be useful in this effort. Now, let's return to course objectives.

From information generated by the various groups of the Workshop looking at course objectives for Nursing N 103, N 201-202, N 301, N 302, and N 303 (Table 3) in terms of the Bloom and Krathwohl Taxonomies, it was possible to come up with a fascinating profile of activities in the cognitive and affective domains. These activities relate to what may be considered our captive universe of courses and objectives. Thus, we have defined our sample, we know exactly what courses we are dealing with, but the situation became somewhat ambiguous when I attempted to pin down precisely what objectives we are dealing with. You will understand why this is so in a few moments. Nothwithstanding the reduced level of precision at which I was able to work, I believe that the data do point up interesting characteristics of the School-of-Nursing curriculum as represented by our captive universe of course objectives.

Table 3

Titles of Nursing Courses Examined[1]

N 103	Human Growth and Development
N 201 -202	Introduction to Nursing
N 301	Comprehensive Nursing Care of Children and Adults
N 302	Nursing in Psychosocial Disturbances
N 303	Childbearing and Family Health

[1]Course objectives are given in Chapter 7.

Profile of the Sample

Before proceeding to examination of a frequency distribution of course objectives and analysis thereof, let me suggest that you have available for reference the summary tables of educational objectives from the cognitive and

affective domains of the Bloom and Krathwohl Taxonomies (Appendix B). Now let us look at graphs (Fig. 2) indicating frequencies of nursing course objectives distributed within categories of the cognitive and affective domains respectively. You will recall that each Workshop group (N 103, N 201-202, etc.) attempted to categorize each course objective. Hopefully, a consensus was reached. It should be noted that the distributions are not accurate in relation to the total number of objectives that we started with because not all objectives were classified, and there were about ten objectives that had at least dual classifications. But the "ballpark" figures indicated here should nevertheless be useful in evaluating course objectives in relation to comparative frequencies and areas neglected or overemphasized.

Cognitive Domain. Now, what can we learn from these plots? First, there are two separate curves, one for objectives in the cognitive domain and one for objectives in the affective domain. Right off, you can see that there are more course objectives classified in the cognitive domain than in the affective domain. This is the first simple conclusion. At this point we need to recognize that one kind of error incorporated here relates to the lack of a framework for classifying psychomotor objectives, which are most likely included within the "Application" category of the cognitive domain. In any event this situation, when evaluated further, may be indicative of the emphasis or direction desired and necessary for future development of curriculum.

Second, there are more "Synthesis" objectives (13 to be exact) than any other kind, which I find rather extraordinary, since this category is second only to "Evaluation" in complexity. This is fascinating information. When you consider the nature of the cognitive domain in which the categories range

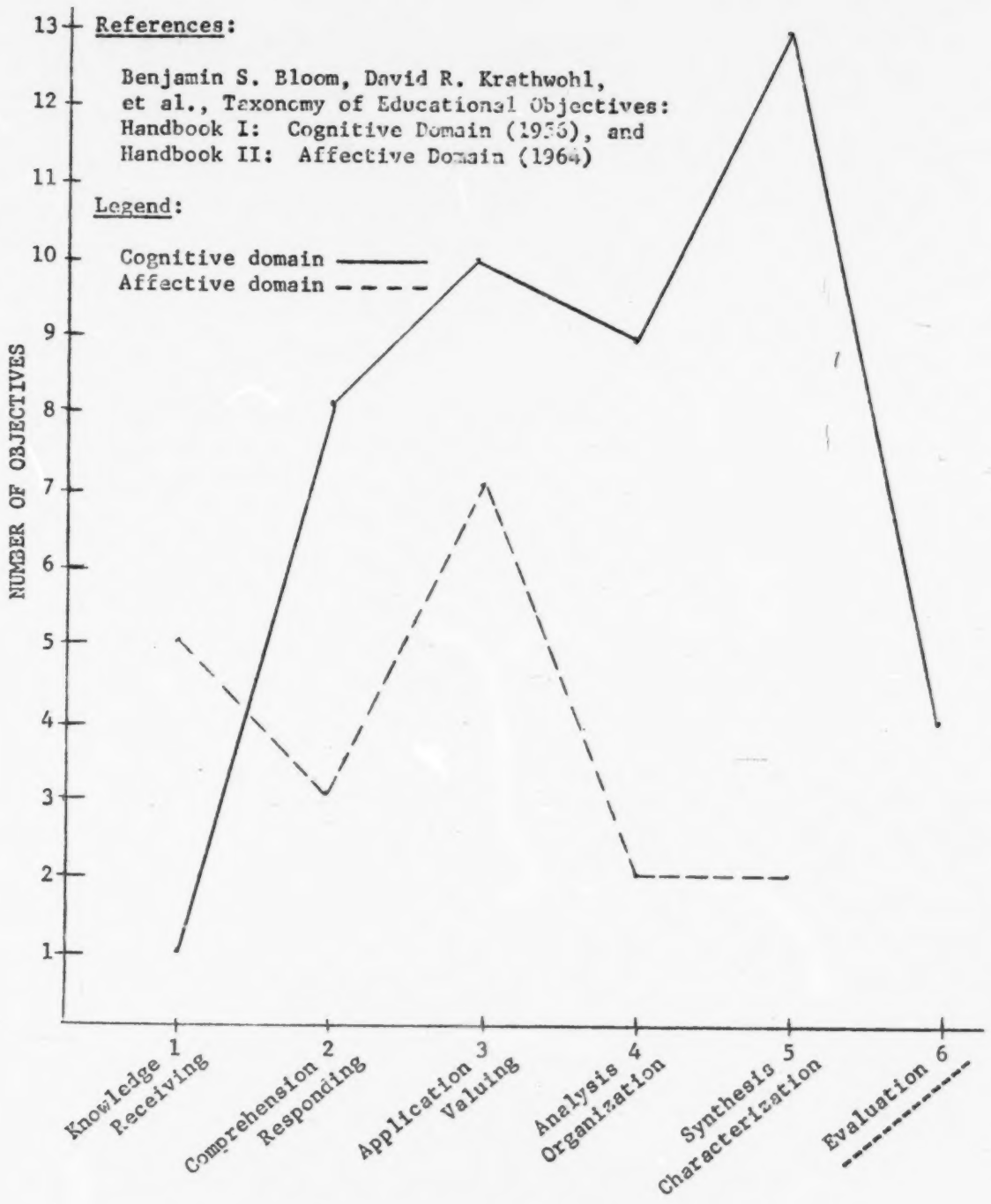

Figure 2 Classification of Objectives

School of Nursing
SUNYAB, January 1971
RKR

through a scale from concrete to abstract, and from the conceptually simplest to the most complex, then apparently you have many objectives that are very close to the highest cognitive level that you can reach--or rather, that students can reach. This particular datum, I think, may indicate significantly your expectations for undergraduate students in the School of Nursing. It causes me to wonder whether the occurrence is by design or by chance. What is the rationale here? Apparently you expect not quite so much of your students in terms of "Evaluation," which is the most complex cognitive category, but considerably more than just "Knowledge," "Comprehension," or "Application," which are at the concrete portion of the range. Is the most complex kind of objective better emphasized at the graduate level? Of course, at this point I am not qualified to judge whether this state of affairs is proper or good or bad or whatever.

Perhaps the kinds of courses that constitute our sample, which includes only a fraction of the total nursing curriculum, quite properly indicate a bias that is desirable in terms of the overall program. Questions like these need to be posed and answered. Inasmuch as the sample of six semester courses includes only one freshman course, perhaps the presence of only one "Knowledge" objective in our sample is easily explained. It must be remembered too, that each higher category of the taxonomy includes the preceding categories. Thus, all cognitive objectives in categories higher than the first one assume, for example, the existence of "Knowledge" objectives.

The category having the third highest frequency of occurrence in the cognitive domain (or both domains for that matter) is "Application." Closely related to this particular category is a problem encountered by all of the Workshop groups--i.e. the arbitrary classification of certain objectives in

the "Application" category of the cognitive domain rather than in an appropriate category of a taxonomy for the psychomotor domain. Inasmuch as a psychomotor taxonomy is not available to us, all groups were forced to enlarge the scope of the "Application" category beyond its intended use.

To conclude comment on the cognitive domain, I note from the graph (Fig. 2) that the frequency of occurrence from lowest to highest for the course objectives in our sample is as follows: Knowledge (1), Evaluation (4), Comprehension (6), Analysis (9), Application (10), and Synthesis (13). Recalling our difficulty in specifying the exact number of objectives--because of dual classifications--yet we do have "ballpark" figures permitting us to observe a partial profile of the School-of-Nursing curriculum that approximates the current state of affairs. From this we see that "Synthesis" objectives outnumber all other kinds of objectives. I will save any additional generalizations for the summing up that I will do later for both domains.

Affective Domain. Concerning the affective domain, we can see from the graph (Fig. 2) that the category having the highest frequency of occurrence is "Valuing." Of the five levels in this domain, "Valuing" occupies the midpoint in a continuum or process that is based on increasing degrees of internalization within the individual student. You may recall from Krathwohl that there is an ordering of components internally, which seems "to describe a process by which a given phenomenon or value passed from a level of bare awareness to a position of some power to guide or control the behavior of a person." Thus, of the nineteen affective objectives considered, seven or almost one-third of them emphasize behavior at a level that is "sufficiently consistent and stable to have taken on the characteristics of a belief or an attitude." Four objectives indicate degrees of internalization greater than

those at the "Valuing" level, and eight objectives indicate lesser degrees of internalization on the part of students. Inasmuch as the number of affective objectives that we are dealing with here is probably not the optimum total number needed, even for this sample, I think I should not try to draw any more specific conclusions than those indicated immediately by the relative frequencies.

However, I would like to suggest that this kind of approach can be used for separate courses, for departmental programs, and for the complete curriculum of the School of Nursing. Profiles of programs at each level would, I believe, provide fascinating information about what you are trying to do. What is accomplished is, of course, still another matter. Using the same approach, we could also analyze course examinations with similarly interesting results.

Levels of Objectives

Two of the questions I have asked myself after observing the Workshop groups in action are: What kind of objectives are we working with, and who ought to be generating behavioral objectives? One of the things I noticed is that for the most part we seem to be dealing with objectives at a level not maximally useful in the classroom. I think most of your objectives were at a level of generalization that more nearly resembles the so-called informational objective described by Dr. Francis. This latter level is primarily useful for expressing departmental objectives rather than course objectives. If we are to use the model described by Mager, then I think you will agree that objectives need to be defined in operational terms. Minimum standards and means of testing or evaluating need to be indicated. Ideally and personally I believe that course objectives, to be most useful to both instructor and

student, ought to be of such a nature that the student is enabled to do a great deal by himself. That is, in the absence of the instructor, a student will be able to get on with the matter at hand without having to depend so much on the instructor. If we can achieve this kind of instruction, the instructor will be "freed up" so that he can attend to other important matters of education rather than constantly having to hold the hand of the student. After all aren't we trying to foster independence in students? It seems to me that much of our education is of the hand-holding and serving-up-on-a-silver-platter variety that serves to diminish independence rather than to increase it.

Generating Course Objectives

From what has been said, I believe that the second question, "Who ought to generate behavioral objectives?" is implied in part. The course instructor, who is most immediately concerned, must exercise primary guidance in the designing of useful behavioral objectives. As borne out by your experience in this Workshop, support from other faculty is helpful and probably necessary, especially when we consider the relationship of the three main levels of educational objectives as described earlier in this conference: viz. school (highly generalized), departmental (informational), and course (behavioral) objectives. Good integration of educational program at all levels requires good communication among all faculty members. In this connection you will recall that a major function of the taxonomies is to provide a means for better communication.

Semantic and Conceptual Problems

One problem that each Workshop group encountered relates to both semantic and conceptual factors. Choosing the best word or phrase was a stumbling

block for everyone. First of all, consensus was needed to agree upon what the group was "really trying to get at" conceptually in any one objective. It was a process of reducing the possibilities, and then finally choosing the one best term among two or more available to express precisely what was meant. Much of the difficulty occurred because the same word or phrase means different things to different people. All you can do in this situation is to discuss and attempt to reach consensus. Inasmuch as instructors for each of the courses were present in the groups working on those courses, I believe that consensus was expedited.

Another reason this problem arose is that the groups were struggling to approach more closely the designing of objectives in behavioral terms and using operational definitions. The word "appreciate" came up in several groups. What is meant by this affective word, and how do you communicate the meaning intended? In such cases, you must expand the statement of the objective to indicate what the student needs to do to demonstrate that appreciation has occurred. Another way is to use parentheses to explain a key word. As some of you brought out in your groups, the use of "appreciate (tolerate)" may resolve the problem of meanings communicated more precisely to more people.

Identifying the Correct Taxonomic Level of Complexity or Internalization

Closely related to the foregoing problem was that of placing an objective in the proper taxonomic category--e.g. 1.10 or 2.10, or 4.10, and so on. Errors of placement are bound to occur. Even though they cannot be avoided, I would not worry about them too much because experience over a period of time will indicate the necessary corrections. Moreover, if an objective is classified at the level of 2.2, that is exactly the level at which the objective

will operate, and everyone will know this. Everyone will know exactly what 2.2 means. If an objective is classified 2.2, then that is what it is until everybody agrees to change it. Thus, there will be good communication and good agreement on the meaning among the users of such an objective, and that after all serves the major purpose of using the taxonomies in the first place.

I was asked whether an objective could be placed at different levels of the taxonomies for different classes of students--e.g. sophomore and senior. This situation gets us into a problem that I was unable to resolve at the moment. It appears that I have some homework to do. For one thing, I'd like to examine the question in terms of learning theory because we quickly get into the problem touched upon yesterday. You may recall the situation of a pianist playing a cadenza for the first time. He probably needs to think about each note or group of notes separately as he plays the complete passage, and this process is demanding in terms of energy and time required. There are "trade-offs" between mechanical skill and interpretive skill. However, after mechanical or physical mastery is achieved, the demands in terms of energy and time are significantly changed. The purpose for which energy is expended is different. It is probably used primarily to satisfy the requirements for interpretation rather than for mere physical playing of the notes. The cadenza is probably played up to speed rather than laboriously at a slow tempo. (I wish to except from this example pianists such as Franz Liszt, who accomplished the cadenza in the Grieg A-minor Concerto too fast and without error the first time he played the concerto.) Thus, getting back to the question of the same objective used at different levels of the taxonomy, I believe this application to be not only possible but necessary. It is possible because an objective comes to mean whatever the level of the taxonomy, for example 2.2,

indicates. It is necessary because we expect students to develop academically and to be able to handle more complex situations as seniors--perhaps a 5.2 level--than they could as sophomores--perhaps a 2.2 level.

Let's examine the situation in which the complexity level of an objective remains static whether a student is a sophomore or a senior. It seems to me that the classification of this objective might then be the reverse of our previous situation--that is, 5.2 for the sophomore student and 2.2 for the senior student. The senior will have considerable knowledge, values, and experience available as immediate recall requiring the expenditure of minimum energy and time. On the other hand, relatively lacking knowledge, values, and experience to satisfy such an objective, the sophomore will need to expend a great deal more energy and time involving, I would guess, higher cognitive processing of materials initially. With increased and expanded experience, as occurs by the time a student reaches the senior year, such materials could be processed mechanically by habit, perhaps by rote learning, requiring a lower level of cognitive operation. At any rate let me end this question by noting that the illustration I used, a cadenza played on the piano, points up the need for a taxonomy of the psychomotor domain. I suspect each of the Workshop groups encountered this need early in the game.

Ultimate Criterion: Learning

Let me end on the note that the ultimate criterion--toward which all objectives should point--is learning on the part of students. So far as many of the criteria currently used by instruments for evaluating courses and teaching are concerned (e.g. University Survey of Courses and Teaching: USOCAT)--criteria such as course organization, ability to present material, teacher-student rapport, knowledge of subject matter, and so on--we need to

make an inferential leap from criteria selected to learning on the part of the student. In this regard we need research to indicate the effects of such factors on student learning. It seems to me that we are on safer ground with "behavioral objectives" since the very name implies measurement and evaluation of educational outcomes in terms of behaviors that can be observed. Not all objectives can be attained immediately nor can all educational outcomes be measured readily. I would suggest that we not avoid certain objectives, especially those in the affective and psychomotor domains, merely because we don't know how to measure the outcomes now. Some risk taking is necessary, for innovation usually involves calculated risks. However, by and large, we should know enough now to be able to design educational programs that are not characterized largely by the "Alice in Wanderland" approach. Given time and opportunity, I believe that the future holds promise for improved educational outcomes achieved by experimentation, planning, and design rather than by chance.

Note: For additional information, please refer to the annotated "Bibliography on Behavioral Objectives" in Appendix D, page 83.

Chapter 9

FUTURE DIRECTIONS

Sylvia E. Hart

Revision of the undergraduate curriculum in nursing is the result of recognition by faculty and students that the emerging role of the professional nurse is one demanding innovative approaches in both education and practice. Since nursing is both a science and an art, and since nursing theory is best measured in its application to nursing practice, the importance of assessing the behavior of nurses cannot be overemphasized.

As the complexity of health care increases and as the health-care delivery systems are modified and expanded, the role of the nurse within this system is one that will be constantly changing. It is incumbent upon educational programs in nursing, then, to prepare persons who are able to adapt to a dynamic, rapidly changing culture and to be consistently responsive to changing health needs and patterns. It is the responsibility of faculties in Schools of Nursing to identify very carefully and specifically the kinds of behaviors that students should demonstrate upon completion of each course as well as upon completion of the program and to compare these behaviors with those required of professional nurses in practice settings. Only in this manner can relevance and quality of educational programs in nursing be assured.

One Workshop of this kind no matter how intensive, cannot completely equip faculties with all of the intellectual tools necessary to accomplish this task. However, any increase in the knowledge and skill required to develop meaningful behavioral objectives can only be an asset that will provide increasing satisfaction to all persons committed to the delivery of high quality health care. (For further development of this topic, please refer to Appendix C. RKR)

Appendix A

EVALUATION OF THE CONFERENCE AND WORKSHOP ON BEHAVIORAL OBJECTIVES

Sylvia E. Hart and Robert K. Rott

Evaluation forms were distributed on the third day and collected on the next (last) day of the Conference and Workshop. Overall, the participants reacted most favorably, indicating enthusiasm for a continuation of this effort along similar and additional lines. The form used is presented below with the numbers indicating the number of responses for each alternative.

Directions: The Undergraduate Curriculum Committee is interested in your reactions to and evaluation of the Workshop just concluded. Please take the time to fill out this form and return it to H.S. 123 by Friday, January 22, 1971. Thank you.

1. Objectives of the Workshop were:

   a) fully and clearly explained 25
   b) discussed in broad terms, but not fully explained 3
   c) mentioned but not emphasized 1
   d) implied in a general way 1
   e) not mentioned or discussed 0

2. Plans for the Workshop, as it progressed from day to day, were:

   a) very well organized 25
   b) evidently organized 5
   c) loosely organized 0
   d) vague and sketchy 0
   e) not evident 0

3. Group assignments were related to the purposes and development of the Workshop in a way which was:

   a) obvious, meaningful, constructive 18
   b) adequately clear, helpful 10
   c) fairly clear 1
   d) hazy, indefinite 1
   e) obscure, confusing 0

4. Participants were drawn into Workshop activities in a way which:

a) strongly stimulated thinking 22
b) moderately stimulated thinking 7
c) produced relatively little stimulation to thinking 0
d) tended to discourage thinking 0
e) discouraged thinking 0

5. I believe that specific information obtained from this Workshop is, or will be:

a) extremely useful 22
b) quite useful 5
c) of some use 3
d) of very little use 0
e) of no use at all 0

6. In this Workshop, I have become acquainted with:

a) a great many new ideas and points of view 1
b) a substantial number of new ideas and points of view 15
c) some new ideas and points of view 10
d) very few new ideas and points of view 4
e) no new ideas and points of view 0

7. The experience of participating in the Workshop has been of:

a) great positive and personal value to me 8
b) substantial positive and personal value to me 13
c) some positive and personal value to me 8
d) little positive and personal value to me 0
e) no positive and personal value to me 0

8. The resource people's grasp of their subject and related fields was:

a) extremely good, thorough and broad 14
b) good; extensive; wide 14
c) good in his subject; fair in related fields 1
d) fair in his subject; weak in related fields 1
e) poor; limited and restricted; inadequate 0

9. <u>What did you like best about this Workshop</u>?

The individual comments written in response to this question were overwhelmingly positive. They can be summarized by saying that the participants thought that there was a fine combination of the theoretical and the practical.

They were extremely satisfied with the substance and delivery of the three major presentations on the first day of the Conference and felt that these presentations set the tone and provided the information necessary for the group activity which was to follow. The length of the sessions was also endorsed by most of the participants as was the overall time schedule. Participants also reported that the materials previously circulated were very helpful.

10. What suggestions would you like to make to improve future Workshops?

There were no specific suggestions for improving future Workshops. However, many of the participants expressed the desire for a follow-up Workshop or at least some type of program that would provide the opportunity to continue the work begun during the Workshop sessions. A need for additional work in the development and evaluation of objectives in the affective domain was also expressed by several participants. Several others noted that there was a need for a program directed to the development of objectives in the psychomotor domain.

11. How would you like to see the work begun in this Workshop continued?

Participants expressed the desire to continue working with course objectives with the same small groups that had worked together during the various sessions of the Workshop. This type of activity did, in many instances, continue for several months following the Workshop. The objectives ultimately identified and accepted as the most appropriate course and program objectives were in large measure the result of the work of these groups.

12. Make additional comments here.

Several participants identified other topics or areas for future Workshops. The four topics most commonly suggested were testing and measurement,

teaching techniques and technology including the development of simulated clinical laboratory experiences, course and teaching evaluation, and independent study. These recommendations were forwarded to the Undergraduate Curriculum Committee to be considered in their plans for additional faculty Workshops.

Appendix B:

SUMMARY OF TAXONOMY OF EDUCATIONAL OBJECTIVES

(Bloom, Krathwohl, et al.)

Handbook I: Cognitive Domain

KNOWLEDGE

1.00 KNOWLEDGE
1.10 Knowledge of Specifics
1.11 Knowledge of Terminology
1.12 Knowledge of Specific Facts

1.20 Knowledge of Ways and Means of Dealing with Specifics
1.21 Knowledge of Conventions
1.22 Knowledge of Trends and Sequences
1.23 Knowledge of Classifications and Categories
1.24 Knowledge of Criteria
1.25 Knowledge of Methodology

1.30 Knowledge of the Universals and Abstractions in a Field
1.31 Knowledge of Principles and Generalizations
1.32 Knowledge of Theories and Structures

INTELLECTUAL ABILITIES AND SKILLS

2.00 COMPREHENSION
2.10 Translation
2.20 Interpretation
2.30 Extrapolation

3.00 APPLICATION

4.00 ANALYSIS
4.10 Analysis of Elements
4.20 Analysis of Relationships
4.30 Analysis of Organizational Principles

5.00 SYNTHESIS
5.10 Production of a Unique Communication
5.20 Production of a Plan, or Proposed Set of Operations
5.30 Derivation of a Set of Abstract Relations

6. EVALUATION
   6.10 Judgments in Terms of Internal Evidence
   6.20 Judgments in Terms of External Criteria

Handbook II: Affective Domain

1.0 RECEIVING (ATTENDING)
   1.1 Awareness
   1.2 Willingness to Receive
   1.3 Controlled or Selected Attention

2.0 RESPONDING
   2.1 Acquiescence in Responding
   2.2 Willingness to Respond
   2.3 Satisfaction in Response

3.0 VALUING
   3.1 Acceptance of a Value
   3.2 Preference for a Value
   3.3 Commitment

4.0 ORGANIZATION
   4.1 Conceptualization of a Value
   4.2 Organization of a Value System

5.0 CHARACTERIZATION BY A VALUE OR VALUE COMPLEX
   5.1 Generalized Set
   5.2 Characterization

Appendix C

PHILOSOPHY AND EVOLVING OBJECTIVES

Hypotheses, theory, and philosophy provide the underpinnings for any vigorous educational program such as that of the SUNYAB School of Nursing. These elements are necessarily in a continual state of flux because of changes in the social and political contexts affecting them. Factors such as the information explosion, national trends and needs in health care, and currents in higher education influence decisions about educational programs. In the view of this writer, constant updating of program philosophy is mandatory. Thus it was extremely heartening (but not surprising) to discover that documentation for such efforts within the SUNYAB School of Nursing exists in the form of memoranda circulated by Dr. Sylvia E. Hart. I prevailed upon her to include this information in Appendix C because I believe that it will have better "survivability" in this report than elsewhere. Future designers of nursing programs may find this section invaluable. RKR

TO: Members of the Philosophy and Objectives Committee, Themes and Threads

FROM: Sylvia Hart

DATE: July 6, 1971

RE: Philosophy and Objectives, Themes and Threads

PROPOSED PHILOSOPHY FOR THE SUNYAB SCHOOL OF NURSING

1. Nursing education for professional practice must take place within a college or university setting since it is within a university setting that both faculty and students are best prepared to respond to an ever changing dynamic culture, rapid technological advances changing concepts of health, of man, of society, of values and of directions.

2. Nursing education must rest upon a broad base of general education. Both the general education and nursing education must be liberalizing in nature; that is, they must "free student's minds," must promote creative thinking and innovative ideas at both the theoretical and practical level.

3. Because nursing concerns itself with man and society, it is essential that the focus of the entire educational program for nurses be centered around these concepts. A firm understanding of man and the world in which he lives is a pre-requisite to the acquisition of any meaningful nursing knowledge.

4. Certain aspects of general education, primarily in the natural and social sciences are pre-requisite to any level of nursing education. Other components of general education must by their very nature, be concurrent with the acquisition of nursing knowledge. It is for this reason that general and liberal education courses must be incorporated into the curriculum at both lower and upper division levels.

5. Since nursing is both a science and an art, the practical application of the theoretical components of nursing must be continually applied and tested in a variety of laboratory settings.

6. Because nursing has as its central focus man and health, it has equal concern for the prevention of illness, the promotion of health and the care of the sick.

7. The nature of nursing makes it mandatory for nurses to work on a peer-relationship with other health professional personnel.

8. Upon completion of the baccalaureate program in nursing, the graduating student should be able to:

a. assess the health status and health problems of individuals, families and communities
b. plan, execute, supervise and evaluate nursing intervention for individuals and groups
c. advance personally and professionally to the highest individual potential
d. advance both the nursing profession and society as a whole in a positive direction.

In order to be able to evaluate whether or not a student has arrived at these terminal behaviors, it is necessary to translate them into behavioral outcomes. This is accomplished by identifying those skills which we see as necessary for the practice of the above behaviors. Some of these skills are:

a. problem solving
b. leadership
c. communications
d. teaching
e. manual dexterity
f. observational acuity
g. critical judgement
h. adaptability
i. creativity
j. independent study
k. interdisciplinary cooperation
l. professional involvement
m. environmental manipulation and control

While this list may not be a complete one, it does seem to cover the kinds of behaviors which nurses need in order to practice at a professional level. Two tasks emerge once these skills have been identified:

a. how can we measure the presence and quality of these skills
b. what kinds of knowledge are necessary for the development of these skills

THEMES AND THREADS

Taking interdisciplinary cooperation as one skill, it is apparent that before a nurse can engage in this behavior, she needs to understand the nature of other health professions, the type of practice in which they engage and the inter-relationships between various types of health practitioners. This theoretical knowledge can be tested within a classroom situation. The practical behaviors can be measured by observations of students in a variety of clinical settings where nurses are engaged in inter-disciplinary cooperation. The nature, extent and quality of this involvement can be assessed and measured.

Taking another behavior, observations acuity, it is apparent that the nurse needs to know what kinds of observations are important for her and how she can best make them. The kinds of information necessary to make meaningful observations on both an individual or group basis, can be identified and transmitted within the classroom settings, and again the extent to which nurses are able to make observations with acuity can be measured in a variety of clinical settings. Certain kinds of knowledge are essential for several of the behaviors listed above. For example, theories of growth and development are a necessary component of nursing knowledge before meaningful communications or teaching or critical judgement could take place. This would be true of environmental components also. Before a nurse is able to make meaningful observations and apply appropriate interventions, she needs to understand the environment and the relationship of it to individuals and groups.

What other kinds of knowledge might be identified as essential for safe and effective nursing practice? We have already mentioned growth and development. Theories of health, health indicies, health deviations, including psychosocial pathology and pathophysiology, the sociology of families and small or large groups, individual and group psychology, environmental components, theories of leadership, communication, group dynamics, teaching and learning, principles of safety, principles underlying therapeutic invention, principles underlying nursing procedures, community health services and how they are delivered, the nature and practice of other health practitioners, legal aspects of nursing practice and the history and purposes of professional organizations are some of what might be conceived of as essential components of nursing knowledge which are needed in order to practice the skills which characterize the nursing practice.

Note: The second memorandum, dated August 13, 1971, begins on the next page.

PHILOSOPHY

Professional nursing has as its focus an understanding of man as an integrated totality in constant interaction with his environment and an understanding of man's reciprocal, adaptive powers as these are involved in both normal and pathological processes. The purpose of professional nursing is to assist man in achieving maximum health and optimum function by promotion of health, prevention of disease, and intervention in illness.

Professional nurse education is based on a solid foundation in the liberal arts and in the natural and social sciences. The nursing major includes the theoretical components of nursing which are continually applied and tested in a variety of laboratory settings. The unique resources of the University and its cooperating health agencies offer a proper setting for the development of nursing education at a professional level.

It is within the University setting that both faculty and students are prepared to respond to changing concepts of health, of man, of society, of values, of technological advances and of a dynamic culture. Professional nurse education within such a design enables students to develop both professionally and personally as practitioners and as contributing members of society, and as such, serves as the base for continued learning and advanced education.

OBJECTIVES

The graduate of a Baccalaureate program in nursing is able to:

1. identify nursing needs of patients and family, and to establish a nursing diagnosis,

2. implement nursing techniques with safety and economy of effort and motion,

3. utilize problem solving techniques in the solution of nursing problems,

4. assess health status and health problems of individual families and communities,

5. utilize community resources in dealing with promotional, preventive, curative and rehabilitative aspects of health care of individuals and groups,

6. recognize opportunities for teaching and to utilize principles of learning in the teaching process,

7. work collaboratively in a professional relationship with other disciplines,

8. demonstrate knowledge of the concepts of planned change and to function as an agent of change,

9. assess and contribute to the alteration of environmental forces which influence the health of patient, families and society,

10. utilize goal-directed communication techniques,

11. evaluate own performance, utilize guidance appropriately, and assume responsibility for own learning,

12. participate, with appropriate guidance and supervision, in research for the improvement of nursing care, and

13. promote advancement of nursing practice through membership and active participation in professional organizations.

SEH:kml
8/13/71

Appendix D

BIBLIOGRAPHY ON BEHAVIORAL OBJECTIVES

Robert K. Rott

Although many of these sources refer to the designing of programmed materials, the procedures and principles also apply to general instructional design and evaluation. I wish to acknowledge, with thanks, the Learning Centre at McGill University for supplying many of the sources included here.

Brethower, D., et al., Programmed Learning: A Practicum. Ann Arbor, Michigan: Ann Arbor Publishers, 1965

This programmed textbook gives examples of programmed learning, an overview of stating objectives, writing criterion frames (which are test items for objectives), relating objectives to criterion frames, and testing. The examples and exercises are primarily directed at training problems in industry. Of special relevance to stating objectives are pp. 45-102.

Briggs, L. J. Handbook of Procedures for the Design of Instruction. Pittsburgh: American Institute for Research, 1970.

This monograph presents a set of procedures ("a model") for the design of instruction based upon Gagne's taxonomy. This "self-instructional" handbook would be useful for planners, developers and users of instructional materials either in a one-man authorship situation, or on a large curriculum development project. Of special relevance to stating objectives are pp. 1-46.

Campbell, V. N. and Markle, D. G., Identifying and Formulating Educational Problems. Berkeley, California. Far West Laboratory for Educational Research and Development, 1967.

While not exactly a "how-to" book, this most interesting report describes an attempt to developing effective techniques for identifying educational needs and formulating them as well defined problems. The extraction of good objectives seems more difficult than the more semantic problem of stating objectives behaviorally.

Cohen, Arthur M., Objectives for College Courses. Beverly Hills, California: Glencoe Press, a division of the MacMillan Company, 1970.

This book includes a programmed lesson in objectives writing as well as chapters on: Definition of Terms, Goals and Objectives in Sequence, Implications of the Process and Criticisms and Caveats. One chapter presents in detail about 100 speciman objectives for various college courses. Appendices include checklists and a bibliography of articles on behavioral objectives.

Cook, M. J., and Neville, R. F., The Faculty as Teachers: A Perspective on Evaluation. Report No. 13, ERIC Clearinghouse on Higher Education, The George Washington University, 1 Dupont Circle, Suite 630, Washington, D. C. 20036. September 1971.

If the ultimate criterion of interest is learning on the part of students, and if behavioral objectives are used to meet this criterion, then there is need for a model to evaluate teacher effectiveness. This paper presents such a model, tying together such factors as comprehensive statement of program, clearly stated objectives for each course, faculty consensus about program definition, obtaining baseline data, and measurement of student achievement.

Espich, J. E. and Williams, B., Developing Programmed Instructional Materials, Palo Alto: Fearon Publishers, 1967.

Chapter 3 of this book provides an outline of an interesting technique for explicating objectives using a dialogue between subject matter expert and "programmer."

Geis, G., et al., Designing More Effective College Instruction. Ann Arbor, Michigan: Center for Research on Learning and Teaching, 1970, Units I, II, III, IV (mimeo).

This self-instructional material is designed specifically for college instructors and teaches techniques for stating behavioral objectives and for moving from behavioral objectives to test items and tests and finally to developing solutions to instructional problems. See especially Units I and II.

Gronlund, N. E., Stating Behavioral Objectives for Classroom Instruction. New York: The Macmillan Company, 1970.

The author explains how to state objectives in behavioral terms and suggests where to get ideas for instructional objectives. Additional suggestions are made concerning how the instructor might use behavioral objectives in measuring student performance. Based on Bloom's taxonomy, the book is aimed primarily at elementary and secondary school teachers.

Gronlund, N. E., Measurement and Evaluation in Teaching, 2d ed. New York: The Macmillan Company, 1971.

For a brief treatment of materials developed in Gronlund's 1970 book, this work is very useful. Refer to the early chapters for objectives treated in the larger context of evaluation and teaching. Step-by-step procedure is given together with useful learning exercises.

Kibler, R. J., Barker, L. L., and Miles, D. T., Behavioral Objectives and Instruction. Boston: Allyn and Bacon, 1970.

This book discusses the different types of educational objectives, controversial issues regarding behavioral objectives, the general

model of instruction, how to plan objectives, and how to write informational objectives and the influence of behavioral objectives in education. Samples of behavioral objectives are given.

Mager, R. F., Preparing Instructional Objectives. California: Fearon Publishers, 1962.

This book is concerned with designing usefully stated objectives rather than with selecting them. It is by now the classic book on how to write instructional objectives.

McAshan, H. H., Writing Behavioral Objectives: a new approach. New York: Harper and Row, 1970.

The author provides a useful work that is comprehensive and readable: Chapter 1, Introduction, treats specificity, clarity, use of procedures, and instructional dangers. The remaining six chapters treat behavioral objective components, developing goal statements, identification of evaluation activities, completing the writing process, unique writing problems, and guidelines for writing objectives. Chapter 5 contains a useful discussion on problems of redundancy and the affective or psychomotor domain.

Pipe, P., Practical Programming. New York: Holt, Rinehart and Winston, Inc., 1966.

A short text designed to teach programmed instruction, it has relevance, nevertheless, to general instructional design. See especially Chapter 3, pps. 18-32.

Popham, W. J., et al., Instructional Objectives. Chicago: Rand McNally, 1969.

Impressed with the desirability of having an organization such as AERA support the general thrust toward operationally stated objectives, Dr. Popham proposed that a committee be established to prepare a set of technical recommendations regarding the specification of objectives. These recommendations would be similar to the APA-AERA technical recommendations regarding tests. This book is the result, containing papers by Eisner, Popham, Sullivan, and Tyler. Each paper is followed by a critical discussion of it.

Popham, W. J., and Baker, E. I., Establishing Instructional Goals. New Jersey: Prentice-Hall, 1970.

This book consists of five self-instructional programs which focus on instructional goals: how to select them, how to state them, and how to establish pupil performance standards for such goals.

Popham, W. J., and Baker, E. I., Systematic Instruction. New Jersey: Prentice-Hall, 1970.

This book is designed primarily for primary and secondary school teachers and covers instruction in general. Chapters 2, 3, 5, and 9 are relevant to the instructor interested in stating behavioral objectives and evaluating his instruction with reference to them.

Rohmlow, H. F., Specifying Useful Instructional Objectives. National Society for Programmed Instruction Journal, 1968, VII, (7), 10-13.

This article describes a four-step routine for objective writing with a special emphasis upon avoiding triviality in writing objectives. The routine consists of: drafting the objective, writing a sample test item for the objective, specifying the principal performance criteria for the objective and specifying the appropriate learning activities.

Simpson, E. J., The Classification of Educational Objectives: Psychomotor Domain. Urbana: University of Illinois, 1966.

Five levels of behavior in the psychomotor domain are explained. This preliminary document was developed under a Vocational and Technical Education Grant, Contract No. OE 5-85-104, U.S. Department of Health, Education, and Welfare, Office of Education. Dr. Simpson, who was with OE in 1970-1971, expected to publish the final taxonomic document in 1971.

Taber, J. I., Glaser, R., and Schaefer, H. H., Learning and Programmed Instruction. Reading, Mass.: Addison-Wesley, 1965.

This is a general text on designing instruction with chapters concerning relevant psychological theory, specific design of materials, tryout and research. See especially pp. 3-4 and 62-86.

Trow, C., Behavioral Objectives in Education in Educational Technology. New Jersey: Educational Technology Publications, 1967, VII, (12).

This article suggests that behavioral objectives, although properly stated, can be misused: The maxims suggested to avoid the misuses of behavioral objectives include: do not keep the objectives a secret from the students, teach the students how they can learn what is expected, and limit the objectives to things for which students have the necessary prerequisites.

Walbesser, H., Constructing Behavioral Objectives. Bureau of Educational Research and Field Services, University of Maryland, 1970.

This programmed text shows how to identify and construct behavioral objectives. It is aimed at primary and secondary school level needs.

Yelon, S. L., and Scott, R. O., A Strategy for Writing Objectives. Dubuque: Kendall-Hunt, 1970.

This programmed text is designed to help teachers write behavioral objectives and to select appropriate tests. It is addressed to the problem of writing objectives for college level instruction as well as for lower levels. A variety of uses of instructional objectives is suggested.